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FORESTERS IN THE GERMAN ARMY

By T. R. HELMS

A GERMAN Army Corps, as known, is a complete unit—it consists of Infantry, Cavalry, Field Artillery, Siege Artillery, Pioneers, Railroad Service, and one Battalion of Jaegers (foresters). Each Army Corps has one Jaeger Battalion which in the Garde Corps is called the Garde Schützen Battalion.

The Jaeger Battalions of all the Prussian Army Corps are not classed as ordinary Infantry, but are under a separate head, known as "The Inspection der Jaeger und Schützen," which prescribes all tactics, service, etc. The uniform, equipment and arms of the Jaeger Battalions differ radically from the equipment of the other infantry. While in ordinary times the coats of the infantry are blue, the Jaegers have green uniforms; the infantry have the bright spiked helmet, the Jaegers have a leather headgear like the "Landwehr" and there is absolutely nothing bright about it.

The back cover of the knapsack of the infantry is calfskin with the hair on, and colored a reddish brown. The knapsack of the Jaegers is adorned with the skin of a badger even with its head on and its natural long hair and natural color. While the infantry is equipped with the uniform rifle and bayonet, the Jaegers have a lighter and shorter rifle, known as "Jaeger Büchse," Hunters Rifle, and their side arm, which is also fixed so that it can be used as a bayonet, is longer than that of the Infantry, and is known as "Hirschfänger"—Deer Knife.

The tassels, which fasten to the belt and adorn the side arms of the infantry, are of different colors, and each respective color signifies the respective company of the battalion. The tassels of the Jaegers are green and the tassels of the noncommissioned officers of the Jaegers are made of green silk and silver, much more ornamental than the tassels of the noncommissioned officers of the Infantry, which are made of cotton. The tassels of the officers of the Jaegers are made of poor silver.

The noncommissioned officers of the infantry are called Unterofficier and Sergeant, while in the Jaeger Battalions they are called "Oberjaeger."

The Jaegers are trained principally for Scout Service, and their formation, tactics, rules and regulations are different from those of the Infantry. These are formulated by the "Inspection der Jaeger and Schützen." The target practice is much more extended, exacting and elaborate than that of the Infantry and a much higher percentage of markmanship is required from the Jaegers and accurate shooting in any and all positions, is the object of the shooting practice. The bayonet drill is practised to the same extent, but at the same time the rules forbid the placing of the side arm as a bayonet on the rifle. The reason is, that the muzzle of the rifle might be damaged and thereby injure its efficiency.

In times of war or at army maneuvers, the Jaeger Battalion is attached to a brigade or division of Infantry by orders of the Commander of the Army Corps, and then sometimes curious incidents and quite often confusions occur on account of the difference in their formation and tactics. When an

GERMANS SAWING FRENCH TREES.

IN THIS FIELD SAW MILL IN THE VALLEY OF THE AISNE THE GERMANS ARE MAKING PLANKS FOR BRIDGES, PONTOONS, ETC., FROM SOME OF THE TIMBER THEY HAVE CUT FROM FRENCH FORESTS. THE JAEGERS ARE CHIEFLY USED FOR THIS WORK. MUCH FRENCH TIMBER HAS BEEN SHIPPED TO GERMANY AND THERE SOLD OR USED FOR GOVERNMENT WORK.

GERMANS CUTTING FRENCH TREES.

REPORTS SAY THAT THOUSANDS OF TREES IN THE FORESTS OF NORTHERN FRANCE WHICH ARE OCCUPIED BY THE GERMANS ARE BEING CUT DOWN BY THEM AND USED EITHER ON THE FIELD FOR VARIOUS PURPOSES OR SOLD IN GERMANY. THIS PHOTOGRAPH WAS TAKEN IN THE VALLEY OF THE AISNE.

FOOT BRIDGE BUILT BY THE GERMANS.

THIS HASTILY CONSTRUCTED BRIDGE OVER THE YSER CANAL WAS BUILT BY GERMANS OUT OF TIMBER MANUFACTURED IN THEIR FIELD SAW MILLS FROM TREES CUT ON THE FRENCH FORESTS.

Army Corps or a division, or brigade parades before a General or the Kaiser himself, and the orders of the commanding general are for all infantry to parade with fixed bayonets, the Jaegers do not fix their bayonets.

As is known, the active service in the Infantry is two years. In the Jaeger Battalions it is from two to three years.

Each Army Corps has one Jaeger Battalion, consisting of four companies, of one hundred men each in times of peace, but in times of war or complete mobilization the battalion numbers 1,000 men and each company contains 250 men.

Under the law of Prussia, every male citizen, in the year that he reaches the age of twenty, has to present himself at a certain time and place, designated by the authorities, for inspection in regard to his physical condition for army service, and as many men as are needed, are picked out, and assigned to the different arms of service. But if any person desires to serve in a special regiment, or has a liking for cavalry, artillery, etc., he volunteers at the age of nineteen, and has the privilege then of choosing the kind of service that most appeals to him. Under this ruling all the foresters, apprentices and those in the Forestry Service when they reach the age of nineteen, volunteer, and of course choose the Jaeger Battalion of the Province in which they live. As there are not enough foresters to complete the quota of men needed, the balance of recruits is furnished by the recruiting commission, which picks out men that in their opinion are mentally and physically fit for service in a Jaeger Battalion.

When the time arrives for the recruits of the year to join the colors, the volunteer foresters present themselves at the

Headquarters of the Battalion two weeks before the conscripted recruits arrive. This gives them seniority over the other soldiers, who as a rule are considered by the foresters only as an adjunct to fill out the ranks. The foresters form the nucleus of the Battalion, and all noncommissioned officers are foresters; none but a forester can rise higher than a private. The common soldier only serves two years, whereas the forester has to serve three years, in order to make a better soldier out of him and prepare him to be a noncommissioned officer in case of need. Those who become noncommissioned officers, and stay with the colors for twelve years, are given positions as Government Foresters. While the foresters serve in the Jaeger Battalion to receive a military training, they also get technical and practical training in forestry.

All this applies to the common foresters; the "Oberförsters," Head Foresters, must secure a thorough education and study forestry at an Academy of Forestry. They attain standing as commissioned officers in the military service and serve mainly in a Special Organization known as "Berittene Feld Jaegers," Mounted Field Dispatch Carriers, and in times of war are attached mostly to the staffs of the different organizations.

By all this it will be seen that the forestry service personnel occupies a distinct and exclusive place in the German Army.

SWEDISH FOREST FIRE INSURANCE

From "SKOGEN," Stockholm, January, 1915
Translated by C. A. Lindstrom

STEPS are under way in Sweden to organize the Swedish Mutual Forest Fire Insurance Company. The company has issued its first memorandum to forest owners and others interested in forest protection. This memorandum reads in part as follows:

"The company will issue insurance adjusted to the needs of owners of both small and large forest areas, and the terms of insurance are to be adjusted to meet the actual requirements of individual cases. For instance, the company will issue insurance,

1. On the soil, the ground cover and the non-merchantable timber,

2. On the above and the merchantable timber,

3. On either of the above, with proviso for certain risks to be assumed by the owner.

"Through appropriate combinations of these forms of insurance, the Swedish Mutual Forest Fire Insurance Company hopes to satisfy the insurance needs of the owners of large as well as small tracts, and at rates easily within the reach of the insured, who hitherto each summer have had to shoulder the burden and worry of the fire risk.

"The company's organization committee begins its work with great expectations, since it has been able to enlist the support of the necessary capital and besides will have the backing of a large insurance company. Furthermore, the committee believes that it can rely on the general interest in forest fire protection, and the knowledge of its importance, to aid in the movement to establish a rational forest culture and care.

"The memory of the tremendous forest fires of 1914, and the anxiety with which these have caused forest owners to view the situation, should also prompt them to cooperate towards the establishment of an effective protection against this hazard, especially since now, after many groping attempts, a powerful initiative is under way.

"Letters and other communications from those interested should be addressed to Organisationskommitten fór Svenska Skogsbrandforsäkringsbolaget, Oceans kontor, Storkyrkobrinken 11, Postbox 24, Stockholm."

UNCLE SAM IN THE MOVIES

By C. J. BLANCHARD
Statistician U. S. Reclamation Service

THE value of the moving picture has been recognized for several years but the Government has been rather slow in adopting it in connection with its publicity work. Last year, there was a general awakening and under the impetus of a big National exhibit at San Francisco, the bureaus of several executive departments set their operators at work with the result that many thousands of feet of film were exposed and a comprehensive exhibit of Federal Activities in motion pictures is now available. The Reclamation and Forest Service Bureaus, for several years, have been collecting negatives, both still and moving, illustrating progress and development, all of which have proven of value in educational work. The pictures showing the engineering work of road building, construction of huge dams, excavation of tunnels

PEACHES—BOTH.
THIS WAS THE TITLE WHICH UNCLE SAM'S MOVIE OPERATOR THOUGHT SHOULD BE ATTACHED TO THIS PICTURE; ONE OF A FILM SHOWING FRUIT GROWING IN THE WEST.

and canals, modern and scientific methods of forestry and lumbering and the use of new machinery in placing concrete, have been widely used and have resulted in increased efficiency on all works underway.

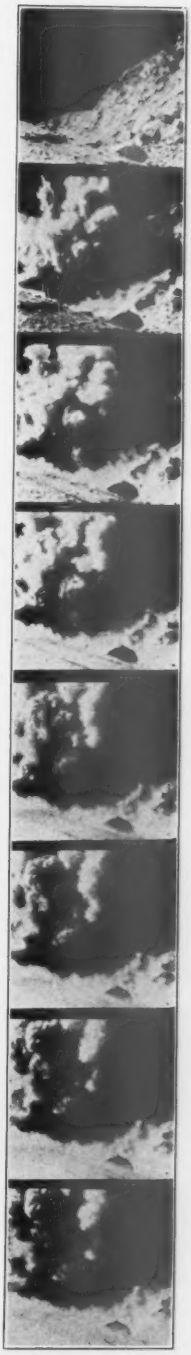
On several of the irrigation projects, where important work is in progress, the camps have been provided with a theatorium and evening picture shows are given, open to employes and their families. The small admission charged has sufficed to return all expenditures for films and equipment. These entertainments have provided amusement and relaxation for the employes located as they are, far from the cities and cut off from the enjoyments of the towns.

They have served another purpose to those actually engaged upon the work, enabling them to study the methods of other engineers. They have stimulated the men with greater zeal in their work and have encouraged the development of new and original plans for labor saving devices. The plan of exchanging films between projects has familiarized the men with all the work and has resulted in speeding up their own activities.

Arrangements are made with reputable film exchanges for the latest and best dramas and educational subjects so that the usual entertainments are as good as those given in the large cities.

Last summer, with funds contributed from the Exposition appropriation and by civic associations and railroads, I laid out a western trip covering about 17,000 miles of Reclamation territory and including subjects on Indian Reservations en route. I was accompanied by our official photographer, Mr. H. T. Cowling, with a full photographic equipment of cameras, films, etc. Nearly 20,000 feet of film were exposed and about 800 negatives of still pictures were taken. We were quite fortunate in having good weather throughout most of the trip and secured excellent film and photographs.

Our first stop was in the Rio Grande Valley, New Mexico-Texas, and our subjects covered an area about 120 miles long. Our experience at Elephant Butte was somewhat exciting as our movies included a number of spectacular



IN SHOSHONE CANYON.

THE CAMERA WAS STRAPPED IN THE AUTOMOBILE FOR A DASH THROUGH THIS PICTURESQUE CANYON.

SHOWING DEVELOPMENT OF A HOMESTEAD.

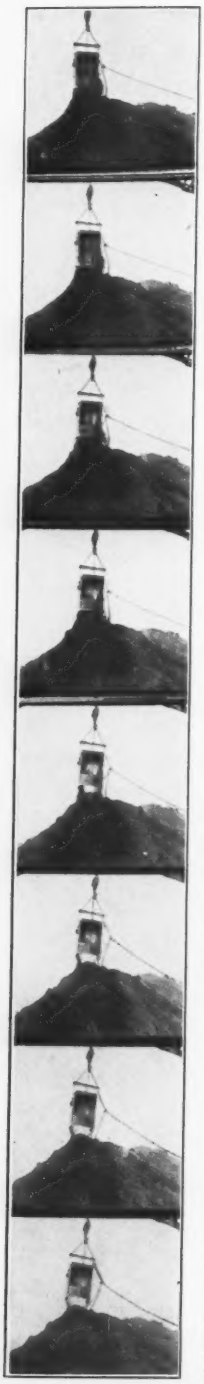
THE HARVESTING STAGE OF A HOMESTEAD SETTLEMENT DRAMA WHICH FOLLOWED THE DEVELOPMENT OF THE LAND FROM A NON-IRRIGATED DESERT TO AN IRRIGATED AND PRODUCTIVE FARM.

incidents in connection with the construction of the huge dam in the Rio Grande Canyon. Taking pictures from a skip while crossing the canyon on the cableways, 400 feet above the river, furnished some thrills but did not result in very good film owing to the swaying of the car and perhaps also to the nervousness of the operator and those who assisted in holding the camera steady. Standing directly under a 17-ton derrick while it was being swung skyward on the cableways tested our composure but in this instance, we secured a splendid film.

On the Salt River project, we found excitement in taking pictures from a rapidly moving auto on a ticklish piece of mountain road skirting a canyon 1,000 feet deep, and later in a trip across the top of the Roosevelt Dam where the speed limit was overlooked. The camera was tightly strapped to the car and then held in place by two men who clung to the tripod while the operator turned the crank. There were moments when the taking of pictures ceased to interest us, particularly when the car swung sharply on the curves and a chasm, which seemed bottomless, yawned below us.

On the big ostrich farm in the valley, the camera was set up in a lane and 1,000 full grown birds were driven directly toward it. If you have never faced an army like this, you can not appreciate the tremors you feel, particularly when you recall the fact that a Missouri mule has nothing on a full grown ostrich in the way of a kick. It was a toss up, however, as to which was the more frightened—the operator or the birds.

At Yuma, on the fourth of July, with the thermometer at 118, we gathered excellent material for our exhibit, in quarry blasts, huge steam shovels and a trip on the new Government railway, down the levees on the Colorado River. A close-up view of the cars dumping rock and the leveller smoothing the levee top gave excellent results. A week later, at Riverside, California, 1,000 feet of excellent film were made at the Indian school. Our subjects here covered the whole institution and showed the Indian boys and girls at work and play.



Five days at the Grand Canyon were productive of some extraordinary film. Here the operator used a filter with splendid results. This great chasm has proven a difficult subject for the moving picture man. The Canyon, which is more than a mile deep, is always partly obscured by a bluish haze which the lens seldom penetrates. The opposite cliffs, nearly a dozen miles away, are usually indistinct and blurred. By using a filter and slackening the speed of the shutter, the distant cliffs and their delicate and intricate carving were sharply revealed, while, at the same time, the towering pinnacles and numerous lesser canyons between were all in view.

The Colorado in flood, offered a fine subject for the camera, and a touch of excitement for the operator whose pictures were taken while standing on slippery rocks, splashed with the spray of huge waves dashing at his feet. We utilized a number of Hopi Indians to add a touch of life and the picturesque to these views.

In Nevada, we were so fortunate as to be on hand when the last bucket of concrete was placed in the Lahontan Dam, a unique structure with enormous concrete spillways arranged in steps. In addition to numerous farm and crop scenes, our films show an interesting experiment in cooperation. Nearly 100 farmers with teams, cleared and levelled ten acres of sage brush desert for a new school site, the land for which had been donated by Secretary Lane. There is also a round-up of about 1,000 head of steers with a little bucking broncho and bulldogging thrown in for good measure.

In Idaho, on the Minidoka project, our subjects were varied. Standing on a boulder in Snake River immediately below the Minidoka Dam, the operator focussed on the big Tainter gates and gave the signal to open. A wall of water 10 feet high, shot out like a catapult straight at him, and the spray of the mighty wave as it dashed against the rocks drenched him to the skin. Quick action in closing the gates prevented any more serious consequences of his daring but the picture was fine. There were many interesting

MOVING PICTURE OF A ROUND-UP

THE OPERATOR POSTED TO PHOTOGRAPH THE ROUND-UP OF 1,000 NEVADA STEERS ON A PIECE OF LAND IRRIGATED BY ONE OF THE RECLAMATION SERVICE PROJECTS.

views showing caterpillar drag line excavators and scoop wheels lifting water, all electrically operated.

On the Boise project, a number of exposures were made from the top of Arrowrock Dam, which is to be the highest in the world. Perched on a narrow platform 300 feet above the river, the camera was set to show the entire process of placing concrete. An entirely new and exceedingly unique method is employed, the whole presenting an especially fine subject for a picture. From a large mixing plant on the side of the canyon, two huge buckets were in operation, loading concrete and then swinging on the cableways to receiving buckets on top of the dam. The receiving buckets, suspended from the cableways, took their loads and

discharged them through pipes to various sections of the dam. The pipes were movable, permitting the spreading of concrete to any point within a given radius. By this method 60,000 cubic yards of material go into the structure each month. One piece of film was made from the Government train which carried us through the big camp and into the steep walled canyon. All the views were impressive as this great structure is to be the most spectacular work ever undertaken for irrigation in this country. It will be 350 feet high and 1,200 feet long on top, and will contain 500,000 cubic yards of material.

THE HEROINE OF THE GRAND CANYON FILM.
THIS CHARMING YOUNG LADY WAS THE STAR OF THE PICTURE STORY TAKEN FOR THE RECLAMATION SERVICE IN THE GRAND CANYON OF THE COLORADO.

In Colorado, our views were mostly crop scenes. We were fortunate in being in the Uncompahgre and Grand Valleys during the fruit picking season, and excellent orchard views resulted.

In Montana, the scenes on the Lower Yellowstone and Huntley projects were of crops. The harvesting of sugar beets furnished an excellent subject.

Encouraged by our successes on other projects, when we reached the Shoshone project in Wyoming, we determined to enter the dramatic field. Accordingly, we devoted some time in staging a Reclamation photo play, the characters for which we had to seek on the project. Westerners, you know, are versatile. It was no trick at all to round up the very people we needed, although the full cast called for no small amount of talent. Our drama, founded upon fact, is the story of a settler who takes up a Government farm. The heroine, a school teacher from Illinois, decides to quit her job and ventures into the new West. She, too, locates a farm and hires her neighbor, the bachelor homesteader, to put it into crops. Through the various steps of making the desert blossom, there runs a vein of romance and a touch of tragedy for the heroine's home is burned down during her absence. The betrothal comes when the young farmer tries to comfort the heroine in her loss. The film, in progressive steps, shows the desert, plowing, levelling, irrigating, seeding, harvesting, and threshing, and in the final chapter, two years later, in the new home, there is a baby.

These films are to be shown in daily lectures at the Panama-Pacific Exposition and should serve to acquaint the

A Western Peach Tree.

THIS IS ON LAND WHICH ONCE WAS A BARREN DESERT BUT WHICH NOW BOUNTIFULLY PRODUCES FINE FRUIT AND FARM PRODUCTS. THIS FILM SHOWS THE WONDERS OF IRRIGATION.

public, not alone with the activities of the Service, but also with the opportunities for homemaking in the West.

After the Exposition is over, they will be useful in the lectures which have become an important function of the publicity work of the Reclamation Bureau.

The War and Navy Departments are entitled to special mention in connection with the utilization of the moving picture. Orders are about to be placed for more than 100 projecting machines which will be installed in numerous forts, in the field and on several battleships. Soldiers and sailors are to enjoy the same films which today are viewed in every city and town in the world, the service to be obtained through the regular exchanges. Films will be used also for educational purposes in connection with the training and fitting of the men for their various duties.

Excellent film was obtained last summer by several bureaus of the Department of Agriculture, by the Bureau of Mines, the Geological Survey and Life Saving Service. The activities of the Government in Alaska are quite fully

OPENING THE GATES OF THE DAM.
HERE THE MOVIE OPERATOR TOOK A DARING CHANCE IN ORDER TO CATCH THE GUSH OF WATER WHEN THE GATES OF THE BIG MINDOKA DAM IN IDAHO WERE OPENED.

portrayed on several thousand feet of film.

The presentation of these films at the Panama-Pacific Exposition, and later, before popular audiences throughout the country is bound to make the general public more familiar with our Government and its functions.

Grow Half an Inch a Day.

Observations at the Utah Experiment Station show that aspen sprouts from good stumps attain a maximum height growth during the summer season of over one-half inch per day.

Coyote Hunting Profits.

Nine hundred coyote pelts were submitted to the Lincoln County, Wyoming, Woolgrowers' Association, at its recent meeting, for the bounty of $2.50 apiece, offered by the association.

Wood Pulp Timber on the Teton Forest.

The Forest Service has just completed an estimate of the timber of the Teton Forest, adjoining the Yellowstone Park on the south, and finds that it contains sufficient spruce, fir, and pine timber suitable for wood pulp to supply a mill of 150-ton a day capacity. Power for such a mill can be supplied by Pine or Rainey Creek, tributaries of the Snake River, and the Snake River will transport the bolts of wood from forest to mill.

THE STIRLING ELM.

ANOTHER LARGE ELM

THE statement that the Benedict Elm in the township of Wilton, Fairfield County, is the largest elm in Connecticut, is challenged, and with just cause, by the claim that the Stirling elm on the country place of Mr. Henry E. Pellew, at Sharon, Litchfield County, Conn., is considerably larger. The Sharon elm at 4½ feet above the ground, is 14 feet 11¾ inches in circumference and the spread about 105 feet, while the Stirling elm, which was planted between 1750 and 1755, and is now about 160 years old, is 18 feet in circumference at a point 4 feet above the ground. Six years ago it was 6 inches larger, the reduction since then being due to the necessity of scraping the bark which was infected by the elm bark beetle The greatest spread of the Stirling elm is about 90 feet, it being exceeded by the Benedict elm in this particular alone.

In the neighborhood are several white oaks and sugar maples which are over 16 feet in circumference.

THE FOREST WILDERNESS.

WHO WOULD NOT BE ATTRACTED BY THIS BEAUTIFUL COMBINATION OF FOREST, LAKE AND MOUNTAIN, OFFERING AS IT DOES SUCH GREAT VARIETY OF RECREATION.

FORESTS AND RECREATION

By WARREN H. MILLER, *Editor Field and Stream*

AT LEAST once a year, even to the most cultured of us, there comes that primitive appeal, the call of the Red Gods, and we long to get away from the worry of civilization and plunge into the wilderness, alone, or with that treasured possession, a real friend.

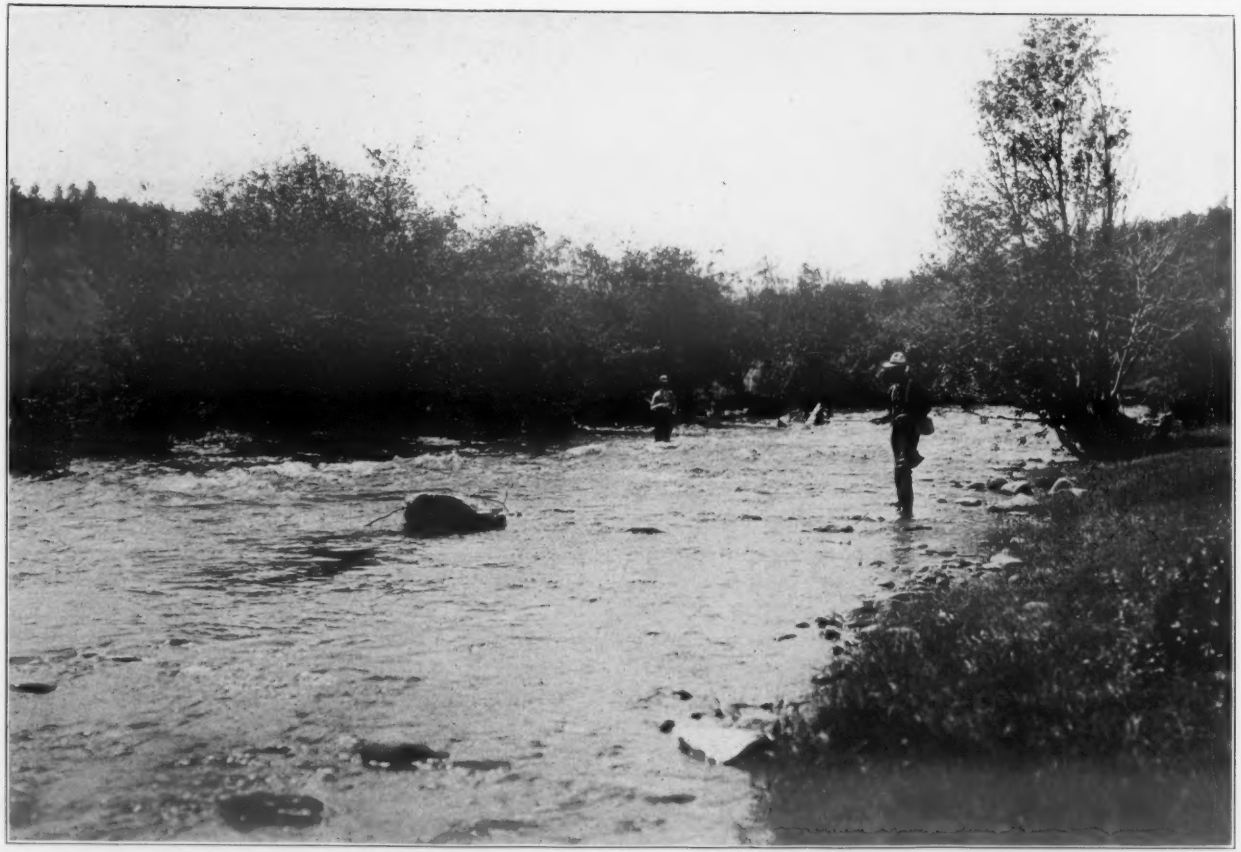
The mountained forests stretch endlessly before our eyes; the oaks and maples and hickories clothing the hardwood ridges; the pines, the balsams and the hemlocks filling the rocky ravines and lining the water-courses. Here a lake, looking up to the sky in spotless azure; there a tiny pond, girt with dead timber; yon a tangled marsh grown over with dense thickets of alder, briar and gum. Within the green depths the wild creatures, these children of Nature, go about their life work; the shy deer nibbling the green grasses in the hollows; the lordly elk feeding in the mountain meadows; the predacious creatures—wolf, lynx and mountain lion—watching the trails and runways; the mink, otter and weasel following the water-courses; the wild turkeys and ruffed grouse scratching acorns and weed seeds on the hardwood ridges; while over it all the song and movement of the smaller bird life attracts the eye. A dimple on the placid surface of the lake speaks of the rise of a large trout, while a sudden splash and the interrupted croak of a frog tells of the swift strike of the black bass at his prey on the lily pads.

Nature is kind, and abundant, and lavish in her hospitality to the forest man who really knows her, to whom her trees are not just trees but oaks, maples, balsams, hemlocks, each having their own particular uses and virtues in her scheme of existence; to whom her plants and rocks are known by name; to whom her birds and animals are brethren of the wild whose habits and customs are familiar; her fishes and reptiles a matter of everyday knowledge. Such a man, possessed of the skill and knowledge which fits him to take his niche in the life of the forest, has the cornucopia of plenty showered upon him; his burden of life is light; he has ample time to develop those nobler qualities of the soul too often grown up with tares in the worry and fret of civilian existence. For, out of the wilderness have come the great truths that are the foundations of right living;

BASS FISHING IN A MOUNTAIN LAKE.
WERE IT NOT FOR THE WELL FORESTED HILLS AND MOUNTAINS THERE WOULD BE NONE OF THIS BASS FISHING AND NO ATTRACTIONS AT THESE LAKES FOR THE RECREATIONIST.

A Canoe Route in the Northland.

WINDING THROUGH HEAVY FORESTS THIS STREAM OFFERS A DELIGHTFUL AND EASY TRAIL FOR THE HUNTER OR RECREATIONIST ON HIS WAY TO OR FROM THE WILDS.



TROUT FISHING IN THE WEST.

THIS TROUT STREAM RISES IN A DENSE FOREST AND FLOWS THROUGH FORESTED LAND ALONG ITS ENTIRE COURSE. THE FACT THAT IT IS PROTECTED BY THE FOREST INSURES PURE WATER, FEW IF ANY FLOODS, AND FINE SPORT.

out of the voice of the wilderness have spoken the prophets that have swayed mankind.

We go into the forest to think; to observe the ways of the wild things; to sweeten our souls with the contemplation of scenes of natural beauty—not to worry and fret and use up our time in contending for the right to live. And, to put this necessity under our feet requires knowledge, power, skill, judgment, the first requisites of a woodsman.

Everything nature requires of you, personally, is somehow learnt with a far greater zest than any lesson taught you in preparation for the battle of civilized life.

How old must a boy be to start his lessons in the school of the woods? Well, I know many of seventy, and not a few of seven years; the former pathetic in their unconscious regret for all those years that have gone forever, when now, at the evening of life, they are learning the lessons, so long neglected. I hear the wail, again and again, from these grey-beards—"too old!" "What, I go canoeing down a wilderness river? I camp out in the mountains with rod or rifle? I hit a flying quail with a shotgun?—alas! young man, my shooting days are over; in fact, they never began!"

How absurd! What of John Burroughs, and Dan Beard and John Muir, that grand old man of the forest lately gone from amongst us in the prime of a hale old age. I will tell you a miracle, one of the secrets of the forest;—the man who attends her school grows young—actually and physically, year by year, younger! With most of us age is not a matter of years but of wear and tear. The ravages of civilization are hard to repair and never can be eradicated; but I have seen young men of twenty-eight who looked forty-five, and in four years of assiduous attendance upon the school of nature put on the physical trim of forty, and in another two years actually catch up with their own age in years and come out, at thirty-four, actually thirty-four in physical body. And what of the mind, meanwhile? Broadened, sweetened, increased fourfold in vigor, cleansed of pessimism, of the little cantankerous affections of the temper that had been slowly eating away the soul—all this and more, those four years as really earnest devotees of the outdoors!

Another wail:—"I am too old to learn—now." One that we hear on every hand. He doesn't know where to begin; nature-books put him to sleep; and, as fast as he loads on a store of facts, they slip away from an indurated memory-pad that long since has had to depend upon notebooks to retain them.

You are going at it wrong, brother; your idea is one of those man-imagined artificialities that Nature does not recognize. Nothing in Nature can be learnt from a book. You can read it in a book; but if it is going to stay with you, to become part of you, the lesson must be practiced in the forest itself. Take the book in hand into the forest, if you will; but take the object studied in your own hand; do with your own body the directions written in the book; work at it until you really know—that is Nature's way! I tell you that to become proficient in the six weapons of the outdoorsman alone—rifle, revolver, shotgun; fly rod, baitcasting rod and surf rod—will furnish ambition enough for a lifetime of recreation; and that takes no account of the side arts that go with the Big Six—camp craft; canoeing, both salt and fresh water; woodcraft; forestry; horsemanship; dog training; outdoor photography; snow travel; and all the branches of natural science. The more you know, the greater your enjoyment of the forest—you can begin anywhere in the school of the woods, and specialize according to your tastes.

There is an old legend connected with the custom of clinking glasses when men drink together. It is that it was done to produce a sound, so that all the five senses, the whole man, should partake in the ceremony of a toast. In the same way, at least one of the Big Six arts of the outdoorsman should be present in the equipment of any man who goes into the forest, so that the whole man may be present; for the Six Arts—rifle, revolver, shotgun and the three fishing rods—represent the mastery of man over the forest; without

THE COMPANIONSHIP OF TREES.

THE GREAT WELL FORESTED VALLEY LIES IN THE MIDDLE DISTANCE, AND IN THE FAR BACKGROUND ARE THE SNOW-CAPPED MOUNTAINS.

IN THE FORESTED NORTH COUNTRY.
ONE OF THE DELIGHTS MADE POSSIBLE BY THE USE OF THE FORESTS FOR RECREATION.

at least one of them he cannot feed himself, cannot take his share of the food that is spread abundantly in her scheme of things, cannot support himself in her world.

Of what avail is the most exhaustive knowledge of botany, of bird life, of photography, of canoe and camp craft, if a man is impotent to secure for himself the food to keep life in his body! Need be or need not be, one should be able to say: "This game I *can* take, in case of necessity; I have the conquering skill to wrest from Nature my share of her bounty, nor all her wiles nor all her wariness shall deny me! I am a whole man! I can support myself in this world of hers and still have the time to pursue such studies as interest me!"

Choose one of the Six Arts or choose them all; there is infinite pleasure in store for you in acquiring the skill to use them efficiently. And none of them is essentially a young man's art. Unlike the strenuous labors of the football field, the diamond, the tennis court, there is nothing in the Six Arts that demands the muscles of youth; nothing that is forbidden to the settled and less flexible bodily organs of age. The steady hand that sights the rifle; the swift arm that points the shotgun; the delicate muscles that wield the trout rod, or place the bass lure with ease and accuracy, or cast the pyramid sinker out into the ocean's surf, belong quite as much if not more to the grey-beard as to the youth. Beginner's awkwardness there will be, at first, and the training of many little muscles long since atrophied by the disuse of civilization, but the older man, with his keener directing mind, is likely to acquire proficiency sooner than impatient and careless youth, too prone to tolerate faults that make for poor form.

In the most representative body of sportsmen that I know, the Camp Fire Club of America, the best rifle shots, the winners with the fly rod, with the revolver and the baitcasting rod, are grey-haired men in their fifties—the younger element is not to be compared with them in these essentials of the outdoorsmen. The latter win in the canoe and portage, horse packing, tomahawk, and to a certain extent with the shotgun; but the grey-beards outshoot them and outcast them when it

comes to weapons of precision, the weapons that count in Nature's world.

And the charm, the thrill that comes with mastery of these tools of the forest, the woodcraft and animal craft and fish craft that accompanies their successful use on wild game!—no man-made artificial sport, hemmed about with arbitrary restrictions, can in the least compare with these great games of life as played in Nature's school!

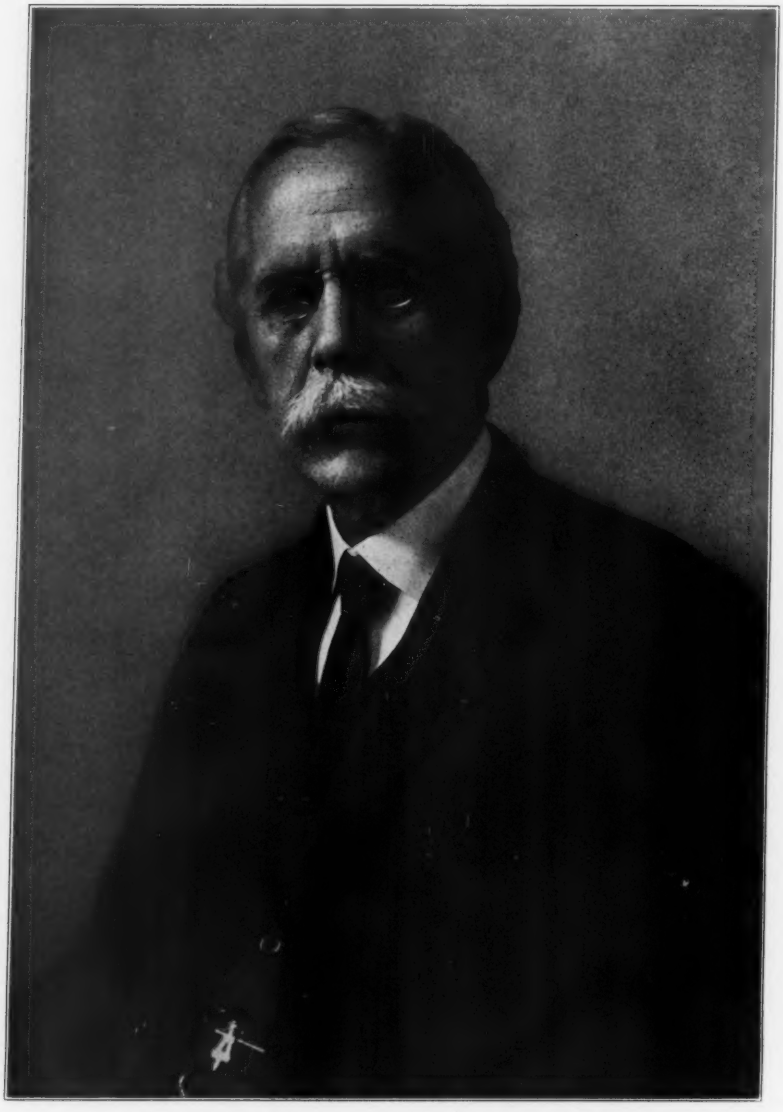
And, as you learn them, all the lesser and concomitant arts follow, as the premise and conclusion. You cannot hunt big game with a rifle without picking up the ways of trail and forest, without learning much of the natural history of your quarry. You become initiated into the mysteries of canoe and pack saddle; of the ways of white water and how to manage a canoe in it; of the stories told by faint tracks and the bend of a blade of grass in a mountain meadow; of the intricacies of the diamond hitch and the perversenesses of pack horses; of the signs of the weather and the shifts of the wind—a thousand things that the school of the woods has to teach you, the ignorance of which spells failure.

You cannot follow the double gun very far without learning, from intimate contact, something of the appeal of brown uplands clothed in October colors, of vast marshes teeming with every kind of life, without getting some appreciation of the matchless cunning and wariness of the wildfowl, and the grouse and quail.

And to succeed with them—ah! that takes the whole of a man! For, nowhere else are you so absolutely dependent upon your own individual skill. A guide may lead you to big game, furnishing the woodcraft that you may lack, asking only that you do not spoil the stalk with cracked twig or incautious exposure; he may even, let us whisper, kill the game for you on your miss! But, in wing shooting—it's up to you! Hit or miss, full bag or empty, it depends alone on you!

And then the devotee of the fly rod! He may be, and probably is, a student of botany and a nature lover; but he is first of all an angler. The school of the woods made him curious to learn more of the forest, and its beauties attracted his mind to a more intimate acquaintance. The winding trout stream, flowing through the most beautiful scenery that the forest affords, makes his way one of charm and plenteous delight, but the actual taking of the wily trout—that is another story. A story of sternness, of skill, of keenness of mind and of willingness to go through any amount of discomfort and tribulation to outwit a fish that seems all cunning and brains! Hats off to the trout fisherman!—he is no lady of the outdoors as popular fancy pictures him, but rather one who needs to be all man if he is going to succeed against the trout!

And the bait caster! What memories of lilypadded lakes, shimmering in the burnished gold of the setting sun, of a roseate twilight peace, when the lake is one vast mirror; of furious battles with that bulldog of the sweet waters, the black bass, are his! A most difficult art, one that requires more than a modicum of practice to acquire;—to place that lure precisely in a given spot, forty or fifty feet away, where a bass may lurk,—not near the spot but right in it, mind you—to so land that lure as to simulate a frog or minnow naturally leaping or jumping to escape possible attack by a bass; to do all this with a short rod and high-speed reel casting the lure as a small boy throws an apple from the end of a stick—to do this with accuracy and deftness, gentlemen, is no unworthy ambition! And, after the strike comes a battle between a five-pound fish and a hundred-and-fifty pound man, equalized by fair tackle, that will put the exhilaration of eternal youth into any man!—especially if he proves himself worthy to beat the fish at his own game, to take him with all the handicaps imposed by the necessary tackle, and win out against all the snags, tactics, leaps, and plunges, rushes, and feints employed by the battling bass.



HENRY S. DRINKER, LL.D., PRESIDENT OF LEHIGH UNIVERSITY, AND PRESIDENT OF THE AMERICAN FORESTRY ASSOCIATION.

"Conservation does not consist in hoarding our natural resources. Perhaps the best definition ever given is that attributed to Dr. C. W. Hayes, when Chief Geologist of the U. S. Geological Survey, to the effect that Conservation is 'Utilization with a maximum efficiency and a minimum waste.' In taking wise and broad measures to avail best of our undeveloped natural resources, the need is not so much to withdraw and set them aside for the use of future generations, when other resources may have been developed, as to be sure they are not wasted in their use by the present generation."

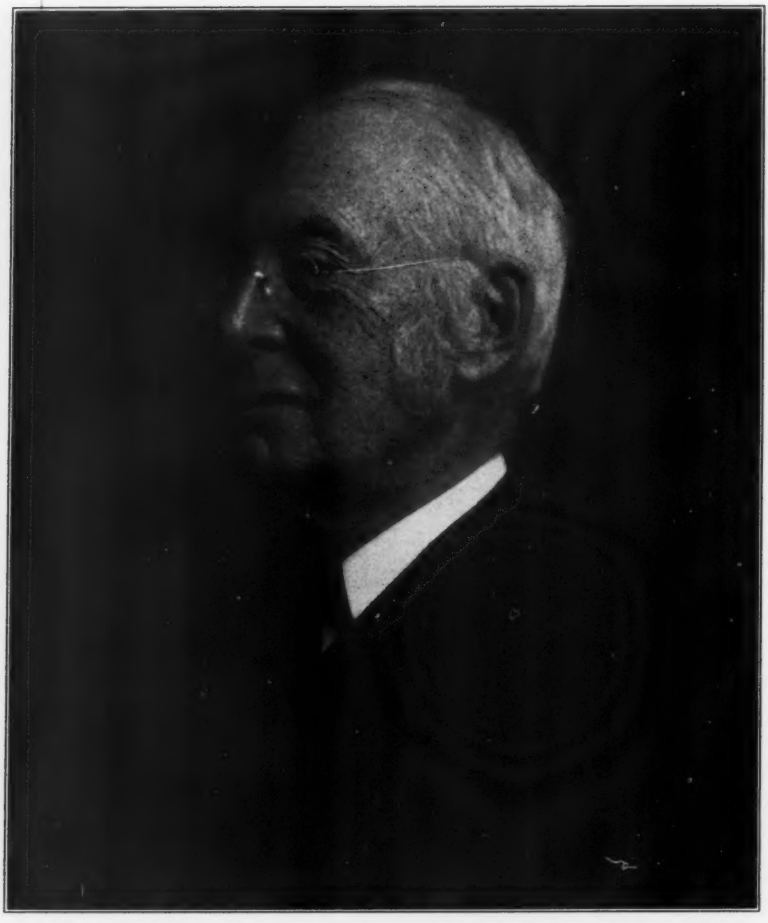
HENRY S. DRINKER.
President American Forestry Association.

CAPT. J. B. WHITE, DIRECTOR AMERICAN FORESTRY ASSOCIATION, EX-PRESIDENT NATIONAL CONSERVATION CONGRESS.

"Forest Conservation will never be a success in America until uniform Forestry Laws are established in all the States, or forestry is practiced in all the timber States under the direction of Government rules and Government expert foresters; as is now done on the Government lands, and as has been done by European countries for 300 years. There must be laws enforcing restrictions in cutting timber in a manner to prevent waste, and according to the law of supply and demand. The timber owner should cut for the market what the market demands, as to kinds and size of timber required for various commercial purposes. In 1650 the so-called Blue Laws of Connecticut had a section as follows: 'No timber shall be felled at unseasonable times, from the beginning of April to the end of September, and that it be improved into pipe staves or some other merchantable commodity within one month after the felling thereof.' This was the first law enacted in America for the conservation of the forests.

" 'Let the tax follow the saw' should be a universal motto. To tax a forest annually for a generation or more while the one crop is growing is an injustice no more defensible than taxing a man annually for the fortune he expects to inherit fifty hears hence. Forests will not be grown by the State and cannot be grown by the individual at a loss, for this would be waste and not conservation by wise use. Let the tax come at the harvesting, like other soil products, and thus encourage men to grow trees according to adaptation of soil and climate."

J. B. WHITE.
Director American Forestry Association.



CHARLES W. ELIOT, LL.D., PRESIDENT EMERITUS, HARVARD UNIVERSITY; VICE-PRESIDENT AMERICAN FORESTRY ASSOCIATION.

"My view of forest conservation is, that it is right effort on the part of the present generation to prevent waste of an important National resource, and to pass on to coming generations that great resource not only unimpaired, but improved and made permanent. It adds greatly to the importance of conservation that forests are not only economic resources, but means to the human enjoyment of natural beauty."

CHARLES W. ELIOT.
Vice-President American Forestry Association.

BOMBARDMENT OF PAPEETE

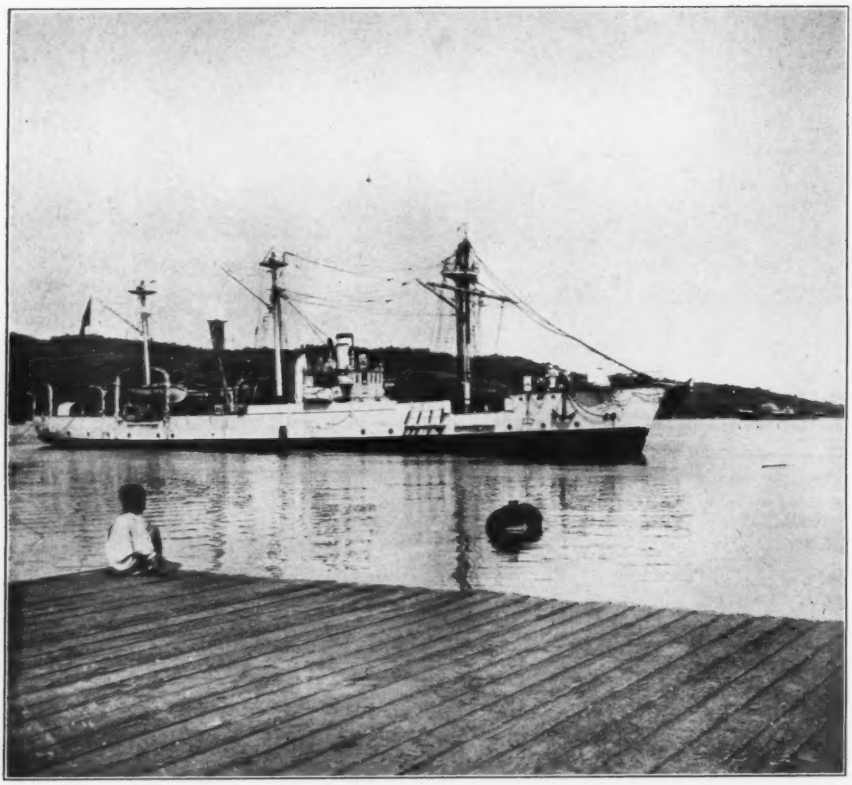
By A TAHITIAN OF HIGH RANK

[An article in the December AMERICAN FORESTRY on "Tahiti," the French possession in the South Pacific, by E. T. Allen, referred briefly to the recent bombardment of the island port, Papeete, by the German cruisers Scharnhorst and Gneisenau (later sunk by the British in an engagement near the Falkland Islands). This article attracted so much attention that Mr. Allen was asked to contribute a further description of the German attack upon the surprised little Polynesian capital. He replied by sending the following account written a few days after the bombardment by an English-speaking Polynesian (whose name is omitted for obvious diplomatic reasons) and reproduced here without change. It is an interesting document with many traces of the well-known Polynesian humor.—Editor's Note.]

"AT BREAK of day of the twenty-second of September, 1914, two big cruisers were lying right in front of the passage Toata Papeete, attended by a big steamer supposed to be a coal tramp. As they had no flag up the naval commander who is in charge of the French defense force on the little gunboat Zelee and on land gave orders to fire blank cartridges to demand the cruisers to show their colors, which were utterly ignored. A second blank shot was fired. No answer. Still the two cruisers came nearer and nearer to the mouth of the passage. The third shot was with a real shell across the bows of the first cruiser. At this the two backed out and steamed slowly to the N. E. until both had gained the position about a mile and a half between the island of Motu utu and Fareute Point.

"When they reached this point up went the Kaiser's flag and two shots followed which raked the Chinese stores by Donald's Store, followed by two more shots which raked the stores of Mr. John Brander on the other side of the street of Donald's Store. This shot passed right through the meat market. The following shots were fired at the Zelee, the gunboat lying in

THE PUBLIC MARKET BURNED.
THE SHELLS OF THE GERMAN CRUISERS SET FIRE TO THIS MARKET AND IT WAS BURNED TO ITS CONCRETE FOUNDATIONS.



THE DISMANTLED FRENCH GUNBOAT ZELEE.

THE FRENCH SHIP ARRIVING AT PAPEETE WITH THE CAPTURED GERMAN TRAMP "WALKURE," AUGUST 13, 1914. THE "WALKURE" IS IN THE DISTANCE AWAITING MEDICAL INSPECTION. NOTE THE UPPER RIGGING OF THE "ZELEE" WHICH HAS BEEN SENT DOWN SO SHE COULD BE SUNK, IF NECESSARY, WITHOUT BETRAYING THE BLOCKADE THEREBY OF THE PASSAGE IN THE REEF. SHE WAS SUNK BY THE GERMAN CRUISERS LATER. PHOTO BY E. T. ALLEN AS THE ZELEE BROUGHT IN HER PRIZE.

front of the mail steamers wharf. The firing was pretty straight—considering.

"After two and a half hours firing the Zelee sank with her colors flying. Two blocks of building were in flames. By supposition one of the cruisers was hit by the shots fired from the fort and when they sheered off at 11 a. m., the smaller of the two had a very bad list and seemed to be heavy in the bows. Anyhow, when the two steamed away the big cruiser kept quite close to her consort, so close that the two of them looked as one. From the Signal Station the cruisers appeared in a battered condition and had very few boats. They looked as if they had been in a fight. Found out by Moana (a later British steamer) they were the two vessels that escaped from Kiau Chau and one was the Admiral's of the cruiser fleet on the Pacific Station.

"On the day of the bombardment some plucky actions were done by the French sailors on the Zelee. Three of them stuck to their guns until they could not fire any more, as the vessel was sinking. The water had reached their feet when they jumped overboard and swam ashore.

"The big cruiser wirelessed ashore to surrender the place, but the commander of the Zelee, M. Decrement, refused and sent back the answer that he would fight the cruisers until there were no

THE GERMAN "WALKURE" SUNK BY GERMAN SHELLS.

A HUMOROUS INCIDENT OF THE BOMBARDMENT WAS THE SINKING OF THE GERMAN STEAMER "WALKURE." SHE WAS CAPTURED BY THE FRENCH GUNBOAT "ZELEE" SHORTLY BEFORE THE BOMBARDMENT (PRACTICALLY THE FIRST FRENCH NAVAL EXPLOIT OF THE WAR) AND WITH HER CAPTAIN AND CREW PRISONERS LAY IN PAPEETE LAGOON. THE ATTACKING GERMAN CRUSIERS SUPPOSED HER TO BE A FRENCH VESSEL AND PROMPTLY SUNK HER WITH HER CAPTOR, "THE ZELEE."

more men to fire the guns in the forts. Vive La France!

"Of course, there was a regular stampede for the mountains. Houses were left, some open, some shut. Other houses were locked up and the doors nailed. I don't think the ones who live in these houses ever intend to come back. Our troops behaved splendidly. They went straight to the beach to cut up the landing party: but no such party came. Something else was going on, too.

"A native of Faaa called Taihia had been out fishing on Monday night and caught quite a lot of fishes which he took to Papeete market in his canoe at four in the morning of the twenty-second. He sold his fish and was returning back home by way of Pare's saloon. At 7 a. m. he saw the two cruisers trying to come in and saw the firing of the first gun. Some wag told him that the shore batteries were saluting the cruisers because they were English and when the ships began to bombard the town he though it was a return of the compliment. So he quietly paddled his canoe back home to Faaa. A lot of people who saw the man paddling back admired his pluck. But when Taihia arrived at Faaa and saw the people running along the road, he asked: 'What is this? Why are you all running away?'

" 'Don't you know,' was the answer, 'that Papeete has been fired upon and is in flames?'

"'No! Taihia replied. 'Is it true? What an escape for me!' He turned and looked at the burning town. 'Well, I am going to get.'

"And he got and he did not stop getting until he had reached the '*fei*' valleys up in the mountains. He told me that seeing the smoke rising over Papeete in thick clouds, and thinking of the narrow escape he had paddling his canoe past the passage, made him lose all his sang froid, made him fly right up the valley.

"Later we found out that the two cruisers were the Scharnhorst of 11,420 tons, 1,200 men, Admiral Graff von Spee and the Gneisenau. On the twenty-first of September these two

cruisers arrived at Bonabora. The Admiral went in and anchored at 9 a. m.; the other stopped outside. Some of the officers of the Scharnhorst went ashore and bought cattle for which they only paid $20 per head. When the owner of the cattle wanted more money they told him he should be thankful for what he got as otherwise the men would take all that he had for nothing. So shut up, said those German officers.

"After feeding up some of the European residents that went on board the Scharnhorst with champagne, cold storage delicacies and cigars, the Admiral wormed out of them all the important items he wanted to know. Namely: 1, Where was the French Admiral and his vessel the Montcalm? 2, What was the time and route of the New Zealand steamers? 3, What time would the San Francisco steamer pass or call at Tahiti and her route? 4, Were there any coals at Tahiti? 5, What strength of guns did the city of Papeete have and what were the different lights for entering the passage at night time?

"The traitorous fools were so scared or drunk they told the Admiral everything appertaining to Tahiti and the position of the different stores, more especially the Societe Commerciale de l'Oceanic, the one belonging to the German trading company. The vessels left Borabora at 3 p. m. and were off Papeete bright and early on the morning of the twenty-second. The bombardment began about eight. Through the commander of the Zelee refusing to deliver the town, their demands and wants came to naught. Report is spreading that the parties who furnished the information to the German Admiral will be brought to trial for high treason. Of that anon. But the visit to Borabora explained why the S. C. O.'s stores and buildings were not fired on and why they steamed to the N. N. E., to intercept the Moana going up and the Maitai coming down from San Francisco. And, likely as not, they have gone on to the Marquesas as the different stores of the S. C. O. up there are full of all kinds of provisions and nothing to trouble the cruisers either.

EIGHT-INCH SHELL IN A CLUB.
THIS MISSILE FROM THE GERMAN CRUSIERS PASSED RIGHT THROUGH THE POPULAR CLUB "CERCLE BOUGAINVILLE." THE CLUB MEMBERS WERE NOT PRESENT.

"Although the Admiral made a statement to some at Borabora that he was accompanied by the Gneisenau and the Nurnburg, this is not sure. The steamer that accompanied them was an English tramp full of coal which they had seized. She was called the Titania. Although the Moana, when two days off from Tahiti on her way from New Zealand, caught a wireless message from the Scharnhorst to a cruiser at some distance informing her of the bombardment of Papeete and that the town was in flames.

"Three dead shells were picked up and on the back plate of each was said to be marked the name of two prominent

A Tree Cut Off by a 5-Inch Shell.
SHOWING A PORTION OF THE DESTRUCTION AT PAPEETE IN THE BOMBARDMENT BY THE GNEISENAU AND THE SCHARNHORST.

firms in the United States. Report has it that the Governor has written Paris per Moana about the matter as the Nurnburg was the consort of the Leipsic when this vessel was at San Francisco a month ago and the two cruisers met off a small island north of the Marquesas. The Leipsic may have passed over some shells to the Nurnburg for the Admiral's ship. Nobody knows. Everybody is supposing, and the shells are here with U. S. A. stamped on them.

"I hope, in fact all of us do the same, that the United States would not be forced to break her neutrality. It would be a big misfortune for us, as San Francisco is our only outlet now. That is, if she sides in with Germany and Austria. The German Admiral Von Spee during the breakfast at Borabora mentioned that the United States would remain neutral only a short time longer as she was already hand in glove with Germany and it would greatly benefit her to side in with the Germans. He gave a toast: 'To our new Allies, the United States of America.' Let us hope it is only some more bluff.

"On the morning of the twenty-second, the stampede of the people from Papeete was ludicrous and at the same time pitiful. The beach was full of people eager to see the two cruisers. Then the shot from the fort went across the Scharnhorst's bows. Up went the flags on both of them and a shot came crashing ashore. Up went a yell: 'It is the Germans!' Then came the famous stampede.

"All along the road to Point Venus went carriages drawn by galloping

RUINS OF TAHITIAN TRADING COMPANY BUILDING.
THIS PLACE WAS ONE OF THE FIRST TO SUFFER FROM THE GERMAN SHELLS. IT WAS THE PROPERTY OF AN AMERICAN FIRM OF WHICH E. T. ALLEN IS A DIRECTOR.

horses, honking automobiles, men, women and children on foot, running until they were out of breath; yelling, screaming, accompanied by the reports of the guns from the cruisers. Some went up Fataua Valley, some up Pirae Valley; some went to Arue, some went over the hills to Point Venus. On our side whole crowds went up into the hills. The houses were emptied, the doors left open. The people grabbed the first thing that came to hand and flew. In carriages, in automobiles, on horseback and on foot, they streamed along and the first valley they were not too scared to notice they went up.

"My little cottage sheltered thirty persons. I was forced to move out and a little higher up to a small house by the hill where I had a fine view of the firing. It was five days before the excitement subsided as the news kept flying about that the cruisers were still in sight. They fired in all about seventy odd shells and they killed one native boy and a Tinito (Chinaman).

"The amount of damage done in the bombardment reaches 2,000,000 francs which the local Government will try and pay the losers by lumber, goods, etc., etc., out of the German store, the S. C. O. And we all think this right. It was only the grit of our head officials in refusing to pull down the flag that saved us from paying indemnity and other demands which would have been imposed upon us all.

"Eighteen days after the great event there was another stampede, a false alarm. Some Chinaman with a Chili imagination saw a lot of drifting trees out at sea off Papenoo River and hearing yarns about submarines and destroyers, took the trees for these kind of craft. He gave the alarm and came rushing into town with the tale that the Germans were coming again and had sent two small men-of-war ahead to seize the port. And then there was another stampede. Hundreds and hundreds left town as before. They tore away in carriages, in autos, on horseback and on foot. Old people were put in handcarts, wheelbarrows were trundled along to bring luggage. Some sixty stopped at my place this time.

"And before evening it turned out to be a false alarm. And some people went out to find the Chinaman and some simply returned to town. It was not much fun for the ones who had run all the way. When they came out they

looked strong and able, when the excitement was over and they had to return they moved like invalids and cripples.

"So much for the present. We are still waiting for the signals announcing the return of these two cruisers. According to the talk they wont have much show. It is something wonderful the amount of men of valor we have here now. Why, it would be too easy for us to conquer the world. I sit and listen, I do not speak. I was never sick of the ague and I never had an attack of the shuddering fit. But you cannot imagine how badly I was seized on that morning. I shook like an aspen leaf or as if somebody was tickling me with a white feather and it was not until the cruisers were well out of sight that my ague and shivering passed.

"And so now I say nothing but sit and sip cocoanut water and listen. Truly, for my part I would rather have these brave fellows tell what they could do and would do than have the poor Germans come back and suffer. Ja ora na! (Good bye.)"

GERMAN STEAMER CAPTURED

[Editor's Note.—The writer of this interesting description of the bombardment did not describe one feature of it which really belongs in the story. It was the sinking by shots from the German cruisers of the German steamer "Walküre" which lay, the prize of the "Zelee," in the harbor.

When war broke out and the news reached the far off little French colony at Tahiti the commander of the "Zelee" learned that a big German steamer the "Walküre" was loading pearl shell at a small island some 50 miles away, and he resolved to capture her.

The "Zelee" found her, hoisted the French flag and called on the "Walküre's" Commander to surrender. The German laughed at what he considered a joke and invited the "Zelee's" captain on board to dinner. He had not heard there was a war or any likelihood of one and it was sometime before he could be convinced. Then fuming with rage he became with his ship the captive of the little French gunboat.

This was probably the first French naval engagement of the war.

The Walküre was mistaken by the German cruisers for a French merchant steamer and during the bombardment she was sunk while the frantic German captain, on shore with his crew, raved at the misfortune of war which compelled him, helplessly, to see his own steamer sunk by his country's cruisers.]

FORESTRY IN WISCONSIN

By E. M. GRIFFITH, *State Forester*

WISCONSIN'S forest reserves, established 10 years ago, are being sought by private interests. In the past when private interests have wanted any part of the State's public heritage, they have gone, directly or indirectly, to the State Legislature, and the desired legislation has been promptly forthcoming. There are in the State about thirteen million acres of land awaiting development and yet it is a question whether the 374,452 acres of forest reserves will be allowed to continue as such.

For 48 years two forces have been working side by side, one to save some small portion of the wonderful natural heritage of the State, another to gain private possession of the timber wealth, to despoil it and turn it into money. The net result of the efforts of these two forces are small tribute to the past quality of Wisconsin's statesmanship.

As far back as 1867 a commission of three members was provided for by law to report to the State Legislature "on the disastrous effects of the destruction of forest trees, now going on so rapidly in the State of Wisconsin," and on the duty of the State in regard to the matter. The report of this commission dealt very comprehensively with all phases of the question and contained the following paragraphs:

"A State that finds authority to regulate the times and seasons when its citizens may catch fish, or shoot game, may certainly assume such as may be needed to preserve the civilization of the

present times; it would require no greater stretch of power to regulate the cutting of timber where it would obviously entail a public calamity, or to encourage its production where it is so much needed for the public good.

"One of the most serious evils this State has to contend with is the purchase of large tracts of land by persons who reside in some other States, or who, if residing here, still have no permanent and living interest in the land. It is purchased by such persons not for the ordinary, legitimate and proper purpose of converting it into a farm or homestead for himself and family, but solely with a view of stripping it of its valuable timber. Leaving the worthless trees and bushes to encumber the ground, he sells it for what it is worth, and renews his depredations upon other lands."

In 1878 the legislature set aside the State Lands in twenty-three townships in Iron and Vilas counties, some 50,000 acres, as a State Park with an express provision that no authority should be given to anyone to cut down or destroy any timber on such lands. Thus was the first State Forest Reserve established.

For 19 years the State Park lands were held intact. But in 1897 the lumbermen who were operating in that part of the State were getting to the end of the timber supply on their own lands. They wanted more timber, and how quickly, how easily and how cheaply they got the "State Park" lands was soon a matter of history.

The results of this sale give some astounding figures, 31,988.30 acres were sold at an average price of $8.14 per acre. One man bought, in his own and his company's name, 4,455.51 acres. More than one-third of the entire acreage sold went to four companies. More than two-thirds went to only eleven purchasers. 5,604.71 acres went to ten other purchasers, which left only 4,641.01 acres for smaller purchasers. Add to this the fact that the State has since bought back 8,949.40 acres of this very same land *without the timber* at an average cost of $3.32 per acre, and it is easy to see how much more quickly legislatures respond to the demands of a small body of private citizens than to any pleas for public welfare.

Many newspapers of the State violently opposed the sale of the State Park lands. The *Oshkosh Daily Northwestern* made a plea for the preservation of the park on February 8, 1897. The *Ashland Press* said, "Why does the legislature wish to sell the timber on the State Park lands? Is there a crying need of more money to spend?" Both the *Milwaukee Daily News* and the *Superior Evening Telegram* published on February 4, 1897, vigorous warnings against the bills.

In spite of the warnings of the newspapers in February, the bill for the sale of the park lands passed.

It had been the policy of the State to give the widest opportunities to the lumbering interests in the sale of State Lands, as will presently be instanced, and so the sale of the State Park lands was no violation of the prevailing policy except that the lands had been set aside and dedicated to use as a Forest Park, had been held for 19 years for that purpose, and were in a region full of lakes and streams and eminently suited to park or forest reserve purposes. To those who would say that 50,000 acres was too large a tract to be retained by the State, we would reply that 50,000 acres was not too much to be retained for *all* the people by a State that would sell unlimited amounts to any one man and that did sell in little more than a single year 16,390.46 acres to one man, George Baldwin of Appleton, from January 6, 1882, to January 13, 1883, and also sold to his firm, Feind & Baldwin, 8,397.90 acres within practically the same period, April 5, 1882, to January 23, 1883. In fact, between January 1, 1882, and February 1, 1883, a period of only 1 year and 1 month, the State of Wisconsin sold 258,820.65 acres of land.

An analysis of the sales of that period gives some startling results: Five purchasers bought 48,030.46 acres, the lowest single purchase being 5,760 acres; three others acquired 10,211.27 acres; eleven others acquired 27,129.69 acres; twenty-seven others acquired 36,005.63. Thus forty-six purchasers acquired a total of 121,377.05 acres or an average of 2,638.63 acres apiece. Fifty-two others took amounts ranging between

500 and 1,000 acres. When it is remembered that these sales covered only 13 months, that the same men and others had the same opportunities in other years, and that certain classes of these lands were sold on contracts with an initial payment of only 25 per cent of the appraised value and that the balance could run 10 years and as a matter of fact did run 20 and 30, and even more years at 7 per cent interest, we are aghast at the free-handed methods employed of enriching private interests at a frightful sacrifice to the great public interest, and cease to be surprised at the slaughter of the State Park, the one bit of earth that had been held for public use.

It was legislative action that made possible this condition of affairs. The public interest, voiced in the newspapers of the State, and to some extent in the legislature, had no weight against private demands. An employee of the State Land Office obtained a request from the State Senate for a report of the land sales of 1882 and the legislature was put in possession of the facts, but no action resulted at that time.

The very legislature that put the State Park lands on the market in 1897, had already passed a law providing for the appointment of a Forestry Commission of three members, who were to draw up a plan for the protection and utilization of the forest resources of the State, and for the organization of a forestry department and the creation of a forest reserve. Thus it is evident that the legislature was fully enlightened as to the public needs at the very moment that it yielded to private demands and gave over the beautiful forest park to be stripped of its timber and left to the ravages of forest fires. The chief argument which was used by the lumbermen and land speculators to induce the legislature to throw the 50,000 acres of park lands on the market was that settlers were needed to help build up that portion of the State. Today, eighteen years after the sale was made, the records show that in twenty-two townships, an area of 500 square miles, there are only twenty-one farmers.

Six years elapsed before a forestry department was actually created and a forest reserve established. It was not until the State had given up to private enterprise about all it had to give, that it was allowed to start a forest reserve with the fragments that were left. The timber was gone from much of the land and private interests now had an opportunity to sell back to the State the cut-over, burned-over tracts that had served their purpose. The reserve was established.

For about 8 years work was prosecuted diligently by the Forestry Department. The region of the old State Park was on the headwaters of the important rivers of the State and included a great natural reservoir of numerous lakes and swamps. Here the reserve was started with the remnants of the old State Park lands as a nucleus. Cut-over tracts were purchased and protected from fire. Young forest growth thrived and in a few years there was a marked change in the face of nature. Then came the protest of private interests again.

The relation of the forest reserve to the general welfare of the State may be summarized as follows: There are 13,000,000 acres of undeveloped land available for settlement in the State; hence the retention of the relatively poor lands in the forest reserve is not retarding general agricultural development. The rivers of the State furnish water power to the extent of 1,000,000 horse power and the region of their headwaters should be kept under forest cover to maintain a more uniform streamflow. The wood-using industries in the State, aside from lumber or paper and pulp manufacture, use more than 930 million feet of timber annually, worth about $20,000,000, employ many men, and turn wood into products of greatly increased values. They now get 50 per cent of their raw material outside of the State, and if a supply of raw material is not maintained, they will remove to new fields in other States. The forest reserve region, full of lakes and streams, is a natural resort region. Ninety-one public resorts are now in operation there. The preservation of the forests here will, incidentally,

increase and perpetuate the natural attractions of this region, furnish a pleasure ground for all people, and put the resort business on a permanent basis.

The private and local interests that have been affected by the forest reserve are the following: Land dealers and speculators had been charging $15 or $16 per acre for lands in the forest reserve region. When the State began to buy large tracts at prices that averaged only $3.32 per acre, the land men were aroused and claimed that the character of the lands in that vicinity had been grossly misrepresented, and that settlers did not care to buy because the forest reserve was being developed in that region. It was found, also, that private interests desired to get possession of lands and lake frontage in the reserve. At least one lumbering interest is believed to be working to obtain possession of timberland that composes part of the reserve. These private interests are working against forestry *ostensibly* for the purpose of forwarding settlement in their community; are, in fact, using the same arguments that were used 18 years ago to get the State Park lands on the market. The only just grievance local interests ever had, was the removal from the tax rolls of land purchased by the State.

No legitimate private interest is really affected. Good agricultural lands in tracts of sufficient size will be sold, lake frontage is available for camps or cottages by lease, and mature or deteriorating timber is sold.

It would seem that Wisconsin should have a settled forestry policy by this time, when its Forestry Department has been in existence nearly 12 years; but the hand of the opposition is still busy trying to shape the public destiny into conformity with a few, a very few, individual interests.

Six years ago a legislative investigation was made, necessarily at great expense, of forestry, waterpowers and drainage, which resulted in a report that was unanimous in favor of the forestry work. And yet again, 2 years ago, the expense of another legislative investigation of forestry was foisted upon the State by local influences, which desired to hinder forestry work; and the legislature was induced also to halt purchases of land as additions to the forest reserve until a soil survey of the region could be made. Again there has been a report favorable to the continuance of forestry work. The best citizens of the State of all political parties are in favor of the forestry work. The Wisconsin branch of the German-American Alliance has declared itself in favor of the forestry work. And still an organized effort is being made to influence the legislature.

The legislature is now in possession of full information secured by its own representatives, in regard to the public need of forest preservation and in regard to the progress already made in the State of Wisconsin. It seems incredible that a legislature of the present day, with the expensive mistakes of the past before them, should again sacrifice the welfare of the public at the behest of a handful of men who are seeking personal benefits behind the thin mask of seeking local welfare.

RESULT OF THE DECISION

The recent decision of the Supreme Court was outlined in AMERICAN FORESTRY for March. It is almost impossible at this time to say what the result of the Court's decision will be. The legislature must decide whether the 375,000 acres of land shall continue to be managed as a forest reserve, the income to be paid into the school fund, or if the entire forest reserve, which it has taken 10 years to build up, shall be thrown upon the market and sold. The land speculators are working to secure the sale of the lands, but it does not seem possible that the legislature will again sacrifice the interests of the people in order to enrich a few land agents and speculators.

PHILIPPINE ISLANDS' FORESTER

READERS of AMERICAN FORESTRY and friends of conservation in general will be interested in the appointment of William Forsythe Sherfesee to the position of Director of Forestry in the Philippine Islands, succeeding Major George P. Ahern, who resigned in November of last year. Mr. Sherfesee is well known to foresters in the United States, as before leaving for the Philippines in 1909 he held the position of Chief of the Office of Wood Preservation in the Forest Service.

Mr. Sherfesee's appointment to the head of the Philippine Bureau was confidently expected by those who have kept in touch with the progress of forest conservation in the Islands. He received the Degree of Master of Forestry from Yale University in 1905, and his subsequent work both in the United States and in the Philippines has been such as to make his present promotion the logical and expected course.

It also argues well for the future of forest work in the Philippines to note the uniformity of approval with which Mr. Sherfesee's appointment has been received by Americans and Filipinos alike in the Philippines, as well as by the organs of the different political parties. In this connection the *Manila Times* of December 22 says:

WILLIAM FORSYTHE SHERFESEE.
DIRECTOR OF FORESTRY FOR THE UNITED STATES IN THE PHILIPPINE ISLANDS.

"The appointment of Mr. Sherfesee to the office of director of the Bureau of Forestry, made vacant by the recent resignation of Major Ahern, should—and doubtless will—meet with general approval. It ensures a continuance of the policy which has made the bureau one of the most useful and efficient of the department of Government Service, and it promotes a man whose past work is an earnest of ability and enthusiasm. Much as has been accomplished in past years, there yet remains vastly more for the Bureau to do before the forest wealth of the Philippines is developed as it should be. Under Mr. Sherfesee the work will lose nothing that can be supplied by energetic and capable leadership."

The *Manila Daily Bulletin*, discussing the appointment editorially, also says in part:

"The action of the governor general in appointing Mr. Sherfesee to succeed Major Ahern as the director of the Bureau of Forestry will be approved generally. It is a deserved promotion and gives an assurance that the duties of that important position will still remain under the supervision of an official thoroughly trained in the work by years of study and practical experience, who has demonstrated his capability successfully in the service of the Government."

The *El Ideal*, the organ of the Philippine "Nacionalista," also comments most favorably on the appointment.

CHINESE TREES DO WELL HERE

THAT the climate of Eastern China is similar to that of Eastern North America seems to be the reason for the success which has attended the introduction of many Chinese plants into this country; at least this is the opinion of the specialists in the United States Department of Agriculture's Office of Foreign Seed and Plant Introduction. In a new publication of this office which lists seeds and plants imported during the fall of 1912 a definite report is given on the growth of seventy-nine different importations from China, most of which may be termed successful. Plant introductions from foreign countries are distributed by the office until sufficient time has elapsed to give some indication of their possibilities in this country.

A maple which grows seventy-feet high, whose leaves turn a golden yellow in autumn, is one of the ornamental trees introduced from China of which something may be expected. A Chinese elm particularly adapted for dry sections for windbreak purposes has proven very satisfactory and will be more generally introduced. A pine tree also has grown here. It is hoped that these may all prove as ornamental and useful as the gingko tree (also known as the maiden hair fern tree) which has grown so well along a number of the streets of Washington.

A peach which bears an edible fruit containing a smooth stone (something quite unknown heretofore among peaches) has been brought from China, and may be used to improve our commercial peach. A tree that grows in roadside thickets in parts of China bears a fine variety of quince, golden on one side and reddish on the other.

Photo by Frank N. Meyer.

CHINESE CHESTNUT, CHILI PROVINCE, CHINA.

THIS IS A VIGOROUS GROWING GROVE OF CHINESE CHESTNUT AT THE VILLAGE OF SCHO DJA DIEN TZE AND WAS INSPECTED BY MR. MEYER IN HIS INVESTIGATION OF THE CHESTNUT BARK DISEASE. THE LOW BRANCHING HABITS OF THIS TREE MAKE IT OF NO VALUE AS A TIMBER TREE. NOTE THE BURIAL MOUNDS UNDER THE TREES.

CHINESE WOOD OIL TREE, TALLAHASSEE, FLORIDA.

THIS, KNOWN AS THE RAYNES TREE, IS THE LARGEST OF THIS SPECIES IN THE UNITED STATES, AND THE ONE FROM WHICH THE MOST VALUABLE DATA REGARDING THE POSSIBILITIES OF THIS TREE IN AMERICA HAVE BEEN SECURED. IF THE WOOD OIL TREES IN ORCHARD FORM BEAR COMPARABLY AS MANY NUTS AS THIS TREE HAS BORNE THE GROWING OF THE WOOD OIL SHOULD BE A PROFITABLE INDUSTRY ALONG THE GULF COAST. IT IS NOW IN AN EXPERIMENTAL STAGE.

This also has done well in its new environment. So have a new hazelnut bush bearing large nuts, and three new varieties of holly.

The adaptability of the Chinese wood-oil tree for cultivation in northern Florida seems to have been proven by recent experiments. A tree at Tallahassee, Florida, bore two bushels of the fruit last season. In addition to being an economically important tree, it is a decidedly ornamental one. It bears

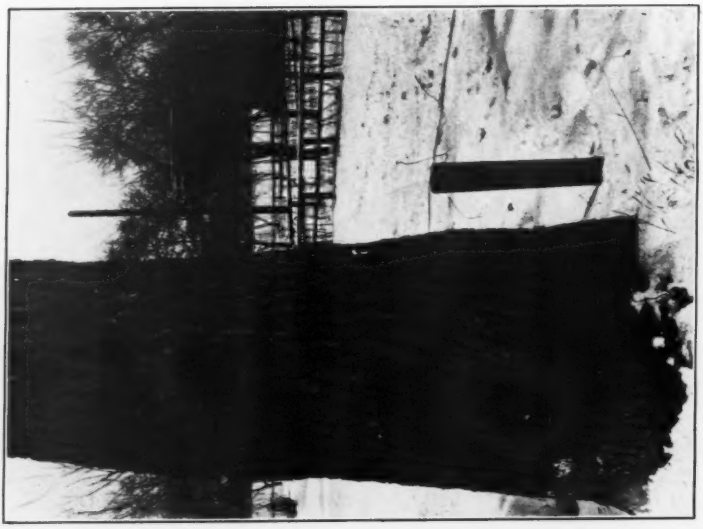


Photo by Frank N. Meyer.

NEAR VIEW OF TRUNK OF DWARF ELM.
THIS TREE IS GROWING IN A PUBLIC PARK AT HARBIN, MANCHURIA.

DWARF ELM, HARBIN, MANCHURIA.
A LARGE SPECIMEN OF THIS SO CALLED DWARF ELM IN A PUBLIC PARK AT HARBIN. THIS ELM IS ONE OF THE MOST PROMISING TREES FOR DRY COLD CLIMATES. THE PHOTOGRAPH WAS TAKEN BY FRANK N. MEYER WHO SECURED PROPAGATING MATERIAL OF THIS ELM.

clusters of white flowers with reddish-yellow centers, and in full bloom resembles a catalpa.

Chinese plants are not the only ones that have been doing well in the Department of Agriculture's gardens for foreign plants. Others from the West Indies, Australia, Spain, South America, Hawaii, and the Philippines are showing interesting possibilities.

A Favorite Haunt of the Boy Scout.

THEY FIND THE HUNDRED-ACRE LOT AN IDEAL PLACE FOR THEIR GATHERINGS AND ESPECIALLY FOR LEARNING SOMETHING ABOUT TREES.

JAMESTOWN'S HUNDRED ACRE LOT

By Shirley W. Allen

Forester with The New York State College of Forestry at Syracuse University

WHAT one of us has not wished for a stretch of woodland near enough to our homes to be available for walks during short periods of leisure, and secluded enough to retain all of its wild charm? It is not too much to say that the absence of such a tract has prevented many a man from developing an acquaintance with nature,—an acquaintance which could not help strengthening both body and character.

The school children and citizens of Jamestown, New York, are purchasing just such a piece of woodland; one which they have used for years. Many a wonderful nature study trip has followed the brooks and paths in these woods, and hardly a resident of the town fails to look back with pleasure on happy days spent in "The Hundred Acre Lot" as it has always been known.

The purchase covers an area of 52 acres, the level part of which lies within and adjacent to the city limits. Back of this lies a sloping stretch of country and the whole tract, except 3 or 4 acres, is well wooded with many

native species. Forty different kinds of trees have been noted, over 100 different wild flowers, twenty-five shrubs, and twenty-five different ferns. And besides, there are over 100 kinds of birds. What a wealth of wild things! "So accessible and so secluded," as one teacher has expressed it. The free and unquestioned use of a place of this sort over a long period of time, and the resulting love for its charms, will instill into any community a sense of ownership of some of the real things of nature. And so it was with a good deal of consternation that the people learned in the fall of 1912 that the heirs who controlled the tract, and who did not at that time live in Jamestown, had sold off all the timber. All the larger trees were to be cut into lumber and everything above 4 inches in diameter was to be worked up into crating.

Today the people own this place and within a short time a Board of Trustees will hold it, clear of debt, in trust for the children of Jamestown. Here is how it happened:

A Woodland Stream.

THE POSSIBILITIES OF MAKING THIS CORNER OF THE HUNDRED-ACRE LOT A MOST ATTRACTIVE PLACE MAY READILY BE SEEN.

In order to save a part of the woodland for the town, it was necessary to act quickly and the response to the appeal made to the people is a great monument to their love of the wild things and their public spirit. During the winter and the following spring the matter of purchase was agitated by the local press and the teachers in the public schools. The idea of retaining a portion of the tract for park purposes was talked of in homes, shops, stores and on the streets. The immediate outcome of the agitation was the organization, by the local teachers, of the School Park Association of Jamestown.

This association was organized in July, 1913, and all citizens, whether connected with the school or not, invited to join. In fact, any person interested, who is over sixteen years of age, is eligible to membership and may join by signing the constitution and paying the annual due of 10 cents. The representative nature of the list of officers is interesting. The President, Mr. M. J. Fletcher, Principal of the High School; Vice President, Mr. Clare A. Pickard, a lawyer of the city; Treasurer, Mr. Arthur W. Swan, Cashier of the National Chautauqua County Bank of the city; Secretary, Miss Mildred R. Falconer, Secretary of the Board of Education. The trustees are Mr. A. A. Amidon, a lumberman, Mr. Fred Curtis, a manufacturer, and four members of the teaching force who have worked hard to secure the purchase of the tract, Miss Clara Ross, Miss Ella Schildmacher, Miss Elsie E. Leet and Miss Augusta Hornden.

A price of $8,250 ($6,250 for the land and $2,000 to satisfy the claims of those who had purchased the timber) was secured on a portion of the area and with splendid courage the Association undertook the purchase. In order to stop the cutting and to make the first payment on the land it was necessary to raise $3,000 in two weeks' time and this was done by means of a demand note. The signatures of forty or fifty interested citizens were secured and these people agreed to be responsible for the payment of the note. During the summer vacation the sum of the note was raised. After school started in the fall, a city-wide canvass was organized through the schools whereby something over $4,000 was raised toward paying for the property. Early in 1914 the committee of the Association having in charge the raising of the funds to cancel the entire indebtedness, suggested a plan which is now being followed. The balance, it was agreed, should be paid off on Arbor Day, 1916, at the latest. The balance should be apportioned definitely among the various schools, Citizens Committee and Foreign Alumni. A definite amount was suggested for each group to raise and no uniformity in method of raising the money was recommended except that no further personal solicitation be resorted to. The ingenuity of the pupils of the school has done much toward making the raising of the final amount an assured thing. Entertainments, candy sales, collection and sale of old rubbers and bottles, and a dozen other methods have been used and on November 1, 1914, the debt had been reduced to $2,300.

During the Spring of 1914 a Forester from the New York State College of Forestry at Syracuse University was called on for a lecture before the schools, and from time to time advice has been given on the handling of the

MOBILIZATION OF BOY SCOUTS.

THE TROOP HAS VOLUNTEERED TO TAKE CHARGE OF A BRUSH-BURNING BEE ON THE HUNDRED-ACRE LOT.

A Picnic in the Hundred-Acre Lot.

tract by representatives of the extension work of the College.

An interesting time came last Arbor Day when a brush burning bee was planned for the Hundred Acre Lot. All the pupils of the schools and many of the citizens joined in one great cleaning campaign; old brush, stumps and rotted timber were piled and much was done to improve the looks and the condition of the splendid tract. The Boy Scouts were in their glory, picnic dinner was in order, all the joy of camp coffee and "hot dogs" tied up nicely with the ravenous appetite of the folks who were "doing it for Jamestown."

During the past winter a man has been employed by the Association for the purpose of trimming out all the dead and down timber which is good for wood, and for piling the brush. Plans for the future improvement of the area are not entirely definite but there is opportunity for planting up the cleared portion of 3 or 4 acres and the management of the area so that the great out-of-doors with all its charm shall be near at hand.

The opportunity for such work by the communities of this country is unlimited and any Jamestown citizen will tell you that it is worth while.

WOODLOT FORESTRY

By S. B. DETWILER.

[Here are a number of brief practical suggestions regarding the care, management and development of the woodlot which will be of great value to the man who owns one and who does not realize how much of an asset it is and can be made.—Editor's Note.]

PRACTICAL forestry for the ordinary farm woodlot consists of:

Protection principally against fire and grazing, and to a lesser extent against diseases and insect attacks.

Damage cuttings of waste material on the ground, dead or dying trees, etc., which make the worst fire traps, and breeding places for diseases. This, in nearly every case, can be done at a profit, as the material yielded will pay for the labor.

Avoiding waste. This means the use of better and more careful methods in the woods—cutting low stumps; working up all material in tops and limbs; working everything into its most profitable form; taking care not to injure remaining trees when cutting or hauling in the woods, etc. All this is closely connected with:

Improvement cuttings made of standing trees, in which the principal aim is the removal of individuals which should be cut for the benefit of the remaining stand, and:

Reproduction cuttings in which the main idea is to secure a satisfactory young growth from seed of the most desirable species.

Planting either on the open waste places; or in existing woodlots, where these are too open, or where they contain too great a proportion of inferior

Photo by E. T. Kirk.

FOREST PLANTING NEEDED HERE.

EROSION IS ALREADY NOTICEABLE, AND IN TIME THE SOIL WILL ALL BE WASHED AWAY. FOREST PLANTING WILL SAVE IT AND AT THE SAME TIME PRODUCE A CROP OF MARKETABLE TIMBER.

Photo by E. T. Kirk.

A SAMPLE OF NATURAL SEEDING.

THE FINE YOUNG WHITE PINE STAND IN THE FOREGROUND, WAS SEEDED BY THE ADJOINING SEED TREES. THE BLANK SPACE IN THE IMMEDIATE FOREGROUND COULD EASILY BE PLANTED TO MAKE THE STAND FULLY STOCKED AND INCREASE ITS VALUE IN THE FUTURE.

species; or for windbreak or for aesthetic effects, etc.

Cultivation of the forest crop, as outlined above, will prove just as profitable as the proper tillage of other farm crops. It has the advantage of being a winter crop and the work is done when other work is slack.

Proper forestry methods aim, so far as practicable, to insure enough light to the best individuals of the best species, so as to allow them to make their best growth, and at the same time to maintain the stand dense enough to produce good, tall, clean trunks. Light is absolutely essential to tree growth, as it causes the raw material taken from the soil and air to be manufactured by the leaves into plant food; the more light, the more food is available and the more rapid is the growth of the tree. From a forestry standpoint, light and moisture are the most important factors, because they are the ones most susceptible to control by forestry methods.

A guide to proper forest practice is to maintain such a cover as will improve the soil conditions. This is generally accomplished by maintaining, as nearly as possible, a complete shade for the ground. The leaves and other decaying vegetable matter add very much to the richness of the soil, forming a good humus and leaf mold. But if exposed to too much light and heat, this humus does not form from the leaves, and their nourishment is wasted.

To prevent drying out of soils, a dense border at the edge of the woods should be maintained. Should the border of

the woods be open, it would be best to plant several rows of such trees as Norway spruce to act as a windbreak.

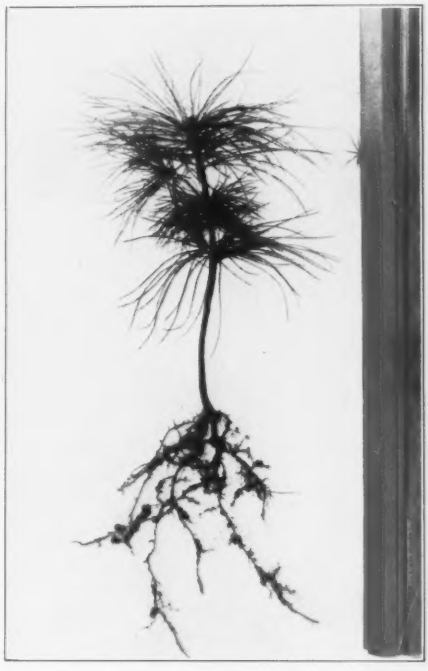
Most woodlots are unfit for the immediate application of systematic forestry. Improvement cuttings must be made for the purpose of putting them into order. These cuttings should remove all trees which the forest is better without, but they should be made gradually so as not to open the cover too much and expose the soil to the wind and sun. It is unwise to cut more than 25 per cent of the poles and older trees in a dense mature forest or to cut oftener on the same ground than once in five years. Particular care must be taken to preserve the trees which are to form the future crop. Remove the spreading older trees over promising young growth, poor trees which are crowding more valuable ones, unsound, decrepit or crooked trees whose places will be taken by others of greater value. Trees of undesirable species should be cut wherever possible to prevent them from reproducing themselves.

Cuttings should be so planned that the tops will just meet by the time the next cutting is made, except in reproduction cuttings where it is necessary to make large openings to stimulate the growth of the young seedlings. Reproduction cuttings should follow only a good seed year.

Go over the woodlot before beginning cutting and carefully determine which trees are to be cut. Mark them with yellow lumber crayon, or an axe, so that the choppers will make no mistakes. Instruct the workmen how to fell and remove the trees with the least possible damage to the standing trees, especially young growth, and see that useless waste in stumps and tops is avoided. Close supervision of the work will add much to the profit of the cutting, particularly in the matter of working up the material into marketable form.

The result of improvement cutting will be a fully stocked stand of rapid growing trees of the best species. Systematic forestry management may then be applied. The selection system is best adapted to woodlots. Under this system only the fully matured trees are cut each year, the cut not exceeding the volume growth for the year. If the cut is less than the annual growth a reserve of larger timbers for cutting at more or less definite intervals will be accumulated.

Only in special cases should the woods be pastured, such as turning in hogs to root up the ground just before the seed falls in a good seed year, thus making the seed bed conditions better. A piece of land should be used exclusively either for woods or for pasture. Well managed for either use the return will be greater than from use for both woods and pasture.



SMALL WHITE PINE SEEDLING.
THIS WAS DUG IN THE FOREST, IT HAS AN EXCELLENT ROOT SYSTEM AND IS WELL ADAPTED FOR TRANSPLANTING.

Fire prevention is an absolute necessity. Fire injures a woodlot by destroying the litter and making the soil poor. It checks the growth and reduces the vitality of the trees, and causes wounds

Photo by E. T. Kirk.

A GULLIED HILLSIDE.

THIS HILLSIDE SHOULD BE DEVOTED TO THE PRODUCTION OF A TIMBER CROP. NOTE HOW THE STRIP OF TIMBER HAS PROTECTED THE LOWER SLOPE.

through which rot and insects enter. Fire also kills young growth, and usually of the best kinds. Thus evergreen seedlings may be wiped out, and hardwoods, especially the poorer species like birch or aspen, given opportunity to increase. Employees should be instructed to use extreme care to prevent and extinguish fires. Brush from the tops of felled trees should be peeled and burned where it will do no harm, or lopped so it will lie close to the ground and decay rapidly. Where there is danger of fire from railways, highways or adjoining timber tracts, fire lanes 10 to 20 feet wide, or wider, should be cleared and burned at the approach of danger seasons.

Proceeds of a Timber Sale.

Sufficient ties were cut from the Wasatch Forest from July to January to amount, at 8 cents apiece stumpage, to $24,000, more than is required to administer the entire forest for twelve months.

Forest Utilization.

Examination last summer of remote parts of the Salmon and Challis Forests is resulting in more complete utilization. A stockman of Mountain Home has been granted permit for 10,000 sheep on the Salmon, and other stockmen will be shown over at present unused ranges as soon as snow conditions permit.

Rotation Grazing Planned.

The Emmett-Payette National Forest Woolgrowers' Association at its recent annual meeting decided to use the rotation or deferred system of grazing the coming season in handling their bands of sheep on the Payette Forest ranges. This means that the forage on a different portion of each allotment will be allowed to mature and disseminate its seed each year before being grazed, thus assuring reseeding of the entire area at least once during every three to five years.

O. T. SWAN'S NEW POSITION

O. T. SWAN has been elected secretary of the Northern Hemlock and Hardwood Manufacturers Association, succeeding R. S. Kellogg who has become secretary of the National Lumber Manufacturers Association with headquarters in Chicago. Mr. Swan was in charge of the office of Industrial Investigations for the Forest Service for some time. Mr. Swan's earlier years in the Forest Service were employed in timber measurements, topographical surveys, and general forestry work in Western States. Later he specialized in the preservative treatment of timber by creosoting and other commercial processes; eventually having charge of a large cooperative project in California to determine timber treating policies for the Pacific Electric Company of Los Angeles, and nine other California electric companies. This work resulted in the building of three wood preserving plants on the Coast.

In 1908 he was in charge of an administrative office of the Forest Service at Albuquerque, New Mexico, developing wood utilization lines for the National Forests of that region. He was sent in 1909-1910 to England, France and Germany to investigate lumbering, wood utilization and chemical wood preservation treatments in those countries, creosoting, etc. He introduced into the United States the French Boucherie pole preserving process for use on the National Forests, and on sap pines of the Southeast.

In 1910 he was placed in charge of the Eastern Division of Products of the Forest Service, which work, upon the discontinuance of the Chicago office of Wood Utilization of the Forest Service, absorbed the latter, and the entire work now given National scope and administrative direction, was designated as the Office of Industrial Investigations. As Chief of the latter office, Mr. Swan has organized lines of work dealing in commercial investigations of interest to the lumber and wood-using trades. He has followed the work of trade association secretaries through correspondence, reports, and personal acquaintance, and by frequent attendance at Trade Conventions. He has had the opportunity of meeting all of the

O. T. SWAN, SECRETARY OF THE NORTHERN HEMLOCK AND HARDWOOD MANUFACTURERS ASSOCIATION.

lumber association secretaries and those of many other related trades in their home offices where their work and problems were reviewed and the work of the Forest Service correlated; he has had the opportunity of studying conditions through travel in every State in the Union, and of discussing with the leading men in the principal industries their various trade problems in their broader aspects.

Mr. Swan is a member of the American Forestry Association, Society of American Foresters, the Committee on Structural Timbers of the American Society for Testing Materials, and the Committee for the Standardization of Shipping Containers, Boxes, etc.

THE AMERICAN LUMBER MARKET

(PART II)

By E. B. HAZEN

[The first part of this article appeared in the March number of AMERICAN FORESTRY and was received with the attention it deserved. This, the final part, deals with the reasons for the decline in the industry and the remedy, and is based upon conclusions following long and careful study and wide experience.—EDITOR]

THE most important factor in the decline of lumber consumption is the encroachment of substitutes, chief among which are steel and cement.

The output of iron has trebled since 1890, and that of steel bars for reinforcement has increased 72 per cent in 3 years. Cement increased 220 per cent in 10 years, reaching the enormous total of ninety-two million barrels in 1913. This output, reduced to board measure, is equivalent to more than one-half of the lumber cut. Brick sales increased 50 per cent in 15 years; patent roofing 200 per cent in 10 years. Substitutes such as steel sash and trim in imitation of wood, steel lath, fiber containers, wall board and hollow tile are sold in increasing quantities to supplant wood. They are merchandised by modern, aggressive methods, well advertised and exploited, and in many cases actually sold for the lumber dealer by the manufacturers. No such effort has been applied in the lumber industry. The lumber yard of today is a building supply depot selling 30 to 50 per cent of commodities which are substitutes for forest products.

A segregation of freight car construction in 1913 shows that 217,000 cars were built—more than in any year since 1899 excepting 1906 and 1907. Steel under-frame and wooden superstructure represented 27 per cent; all-steel, except sheathing and decking, 15 per cent; and all-wood box cars represented only 5 per cent of the total. About 42 per cent, largely ore and gondola cars, were of all-steel construction. The increase in the steel frame type, covered by the 15 per cent item, meant a loss to lumber of over eighty million feet in 1913.

Although wood block paving is recognized as the best in such cities as London, Berlin and New York, less of it was laid in the United States in 1912 and 1913 than in 1911. Forest Service statistics show that only 5 per cent of the pavement of this country is of wood block. Why, if wood blocks are better? Simply because wood block paving is not sold as other paving is sold.

"Safety First" has entered the lumber market as a factor. Under its guise the aggressive manufacturer of so-called fire-proof materials has created a strong public sentiment against frame construction. This has been reflected in the building codes and fire-limit regulations of many cities and towns with telling effect. Lumbermen have allowed printers' ink and business-getting methods to displace their product with an often inferior product.

OTHER REASONS FOR DECLINE

The drift of population to cities, the consequent decrease in rural population, the temporary decline of pioneer land

development, the purchase of automobiles instead of homes, the increased number of apartment buildings displacing houses, the 16 per cent increase in farm tenancy in 5 years which tends to lessen improvement of the property—all of these influences have affected adversely the consumption of lumber. To what extent they shall continue to affect it depends upon those engaged in the industry.

EFFECT OF SUBSTITUTES ON PRICE

In late years all substitutes have declined in price, partly because of new discoveries in their manufacture. Industrial chemistry has worked wonders with steel and cement. Efficiency has been applied in producing and marketing. Some substitutes are actual and some alleged economies, but at least 75 per cent of our lumber meets them in competition. In 1911 the Boston Chamber of Commerce secured bids on various types of houses according to identical plans, and found that one with a 12-inch solid brick wall would cost 12 per cent more, and one of stucco or hollow block 6 per cent more than a frame house. The timberman says that the lumber equivalent of a barrel of cement worked into concrete is 700 feet board measure. Therefore, whenever the two meet on an equivalent use value, the price of cement will govern the price of lumber. Other substitutes affect it in the same manner under similar conditions.

It is easily seen that there are conditions in the lumber business requiring new and vitalized methods of procedure if lumbering is to maintain its position among the leading industries of the nation.

WHAT IS TO BE DONE?

There are so many lumber manufacturers operating under different conditions that it would be impossible to secure a unanimous opinion as to the steps necessary to remedy existing conditions. There is no general agreement as to what is wrong, nor thorough understanding of the economics of the situation. The lumber papers of the country have for 2 years given much space to an analyzation of the causes for depression in the business. Today there is much better understanding of the problem among manufacturers, but the basis of constructive effort must be a thorough study of the question and self help by lumbermen themselves.

Only a few of the remedies which should be applied will be mentioned here. Good business can only be realized through

1. Publicity.
2. Salesmanship.
3. Research work.
4. Initiative.
5. Better producing organizations.
6. Cooperation.

PUBLICITY

Publicity must remind the public of neglected uses for lumber. It must visualize the warmth and beauty of lumber, appealing to an inherent preference for wood in exterior design, panel effects, furniture, etc.; it must show its permanent utility, its workableness, its adaptability to individual tastes, its susceptibility to remodeling and improvement to suit changing conveniences and customs; it must demonstrate the safety, superiority and lower cost of fire-proof, "mill constructed" factories, warehouses and public buildings, equipped with automatic sprinklers, and the application of the same principles in modified design to the house; it must point out the efficacy and reasonable cost of means to prevent decay in wood; and, most important of all, it must correct the fallacy that lumber is becoming scarce or timber supply exhausted.

By giving publicity to the distribution of the cost of the product, manufacturers will correct the erroneous impression that lumbermen are privileged exploiters of the nation's resources and that they receive disproportionate gains. The public must learn that lumber is the product of an industry which employs more workers than any other and ranks third in the United States in the point of capital invested. It produces two and three-quarter billion dollars worth of merchandise annually, about 80 per cent of which is represented by labor. The public is interested because of its ownership of National

Forests and because in certain sections timber pays a major portion of the taxes and public improvements. These reasons, together with a realization of the public's constant need for a timber supply, will lead to more equitable taxation, better support of fire protection laws, the establishment of a permanent National Forest policy and the enactment of constructive legislation.

SALESMANSHIP

Hand in hand with publicity must go stimulation and satisfaction of demand by efficient salesmanship. Modern business has shown that salesmanship is more than order-taking. It involves a thorough knowledge of the product to be sold and methods of manufacturing; a study of markets; possibilities of development; the production of material to fit those possibilities; and the easy acquisition of that product by the consumer at the lowest price consistent with sustained, reasonable profits. The manufacturer should definitely classify and perhaps even brand building materials for the benefit and protection of the user, grade to fit common and technical uses, and cut to fit ultimate uses according to plans. Salesmen will assist consumers with information, plans and instructions; cooperate through distributing agencies with helpful personal service, and make good all material that fails owing to mechanical imperfections, carrying honesty of purpose to the user.

As an example of well-directed selling effort, suppose that each of the 6,200,000 farms of this country should consume 1,000 feet more lumber per annum than it is now using: the entire cut of Oregon and Washington would be absorbed. Suppose that every farm upon which animal food is wasted would erect a silo: the lumber consumed would require one-half of the entire cut of the United States for one year. Suppose wooden blocks were used as they deserve to be used on the streets and country roads of the United States: the increased use of lumber would be beyond comprehension, *and every foot used would mean economy to the user.*

Up to the present time lumber makers have made little effort to deliver lumber in shapes, sizes and lengths ready for the ultimate user. Much lumber is cut before being put to final use, so the time shall come when cutting will be accomplished at the mill where the waste can be utilized, freight saved and delivery made in the sizes desired with economy to all concerned. Knocked-down houses, barns, garages, chicken houses, and even baby cradles are cut-up possibilities. Shelves, ironing boards, knocked-down boxes, and packages of short boards of assorted sizes for the boy carpenter will be stocked by merchants equipped to deliver such packages with other goods. Improved roads and auto truck service will revolutionize delivery from lumber yards.

The modern methods which must be practised by manufacturers' salesmen will make demands upon distributing agencies. They will call for development along the progressive lines that some lumber retailers and many distributors of other merchandise are following. More retailers will carry ample stock, comb the field for business, and advise buyers intelligently and honestly in selecting material. They will depend upon intensified effort, large volume and reasonable profit, rather than upon mediocre effort, limited volume, high prices and speculation. There should be fewer yards, larger and better equipped, with competent selling forces. Railroads will cooperate with distributors by giving in-transit rates, under which lumber may be re-shipped from central distributing points at low cost.

RESEARCH WORK

Research work, fostered by the manufacturer, will assist materially in market extension. There should be engineering research, dealing with structural problems, wood blocks, wood pipe and silos; chemical research developing the uses of such products as wood pulp, wood flour, ethyl alcohol, tanning materials, distillates, producer gas and similar products, as well as the further development of fire-proofing paints and other coverings. There should be research by business economists to find and emphasize old and new uses for lumber, by-

products and forest and mill waste, and determine districts in which to concentrate selling effort according to the needs and purchasing ability of those communities.

INITIATIVE

The initiative of the manufacturer should lead him into graded schools to foster manual training; into colleges to foster wood engineering to accompany courses in steel and concrete engineering and construction; into public affairs to foster proper public use of wood for bridges, roads, pipe-lines and other utilities, to encourage immigration, irrigation, back to the farm movements, intensive farming and low rates of interest to agriculturalists; into city administrative matters to correct and prevent unjustly discriminatory building codes; and into the organization of paving companies, home loan associations and the platting of suburban additions.

BETTER PRODUCING ORGANIZATION

Better producing organization is necessary in order to keep pace with such thorough selling effort. Demands will be made upon it for quick service, more perfect millng and more thorough and exact grading of products, further and more specialized manufacture to fit particular uses, and methods and means for conserving every possible item of lumber, waste and by-product.

COOPERATION

The sum and substance of all these requirements is that *lumber manufacturers must effect one combination in restraint of waste and another in promotion of legitimate trade.* To accomplish them is not a task for one manufacturer nor for the 46,000 separately owned and operated saw mills in the United States today. No successful business can point to a history of achievement through the wasteful competition of so many grossly inefficient producing units.

Consider the number of such units in the lumber business today. Thirty-three thousand mills make less than 20 cars of lumber each per year; the annual production of each is an equivalent of less than fifty Douglas fir trees. Twelve thousand other mills make less than 200 cars each per annum; 500 Douglas fir trees would supply any of them a year. When we realize that one-half of the National supply of lumber comes from mills of these capacities with necessarily poor and limited equipment, we can better understand why unsatisfactory lumber reaches our markets, and why lumber is furnished to dissatisfied buyers.

These small units cannot accomplish the results demanded of the industry. If the greater part of our Nation's needs were supplied by large, efficient units, consisting of eight to twelve plants, under highly skilled management, the problem of distribution and close utilization would be worked out in a manner helpful to all. This would not mean control of the industry by monopoly. It would simply make possible the efficiency required in handling the product at the lowest cost to consumers.

The trend is already toward larger individual mills, because it has been found that they can produce more economically; but a single mill cannot market its output scientifically. Large-scale production and twentieth-century distribution must be accomplished.

The advantages of large units to producers and consumers will be apparent but there are vital requirements that even these units cannot meet. Some are questions for the industry as a whole to solve through associated effort, and some must be dealt with by Government. Associations will deal with matters of general publicity, traffic, insurance, workmen's welfare, building code revision, conservation, irrigation, and some of those matters of research and education which are of general interest to the industry and the public.

The Government is constantly increasing the scope of its Forest Service and chemical research work. It is now undertaking a constructive investigation of the lumber industry, and from it will result a better understanding of the situation than has yet been published. Its presentation of the present condition of the industry will prove illuminating to the public, valuable to lumbermen and of service to legislators;

and, above all, helpful in establishing a stable governmental forest policy.

"THE PROBLEM OF THE HEAVY LOAD"

Two fundamental influences affect the American lumber market. One is over-production, the other is over-supply of capitalized raw material. It is asserted by some that betterment of market conditions by large-scale production would induce increased over-production, owing to a demand for returns from capital invested in stumpage. It has always been true that the lumber manufacturing industry cannot carry the burden of all of the raw material supply if capitalized. It is the experience of operators that a 20-year supply of trees is as much as any operating property can carry at any period, if purchased at current market value.

Based upon a possible maximum cut of forty-five billion per annum, 20 years will be required to convert one-third of our trees into lumber. Taking Douglas fir stumpage at the valuation placed upon it in the Government's report on the lumber industry, and figuring out the selling return necessary 20 years hence to pay stumpage and interest, without any conversion profit for the operator, it is found that an increase of about 40 per cent over the 1913 lumber price must be realized. This calculation allows interest and other carrying charges on 20 years' supply of timber, depreciation of equipment and interest on working capital. To achieve these results, with an added conversion profit for the operator, it is apparent that all of the efficiency prescribed must be applied, and that the selling return on lumber must increase. An increase of 40 per cent over the normal average price for Douglas fir 20 years hence will not be necessary provided maximum efficiency is applied, resulting in less producing cost through improved methods of logging, manufacturing and distributing, more complete utilization of raw material and salvage of by-products.

The contention of authorities is positively correct, however, when they insist that there must be a means applied to withhold from the manufacturing market the two-thirds of the present timber supply which cannot be utilized during the coming score of years. One-fourth of the standing timber of the Nation is in National Forests.

Of the surplus stumpage which cannot be absorbed during the next 20 years, the private owner holds 62 per cent and the Government 38 per cent. The latter must be withheld if private owners are not to be compelled to destroy a national resource, honestly acquired, safe-guarded at private expense and necessary to the future welfare of the country; for should it be converted at this time its value would fall below the cost of conversion, and loss to labor and community would result. The Government, having no capital invested, no taxes to pay and no carrying charges other than nominal administration, can afford to hold their timber until it is needed. Closer utilization in that period will pay the cost. The first step toward cooperation and the solution of "the problem of the heavy load" should be to withhold government timber from sale except in localities which cannot be supplied from other sources. Individual owners of timber cannot look for early returns on their investments. Such investments are fixed and cannot be withdrawn at will. If not financially able to hold it, owners should pool their interests in stock companies to the end that our remaining private timber shall pass to organizations financially strong enough to save it from destruction or profitless exploitation.

It has been urged* that a trade commission be created with power to authorize cooperation so far as it shall not be inimical to the public welfare. To this it may be added that when a natural resource is jeopardized, such a commission should require compulsory cooperation to such a degree that it shall not be destroyed without profit to the community that produced it.

The duty that lumbermen owe to themselves, their communities and the Nation at large has been neglected. A great and vital industry has suffered because the brains and energy engaged

*Professor Van Hise, Wisconsin University.

in it have been directed toward mechanics rather than economics. Years of profitless, destructive effort have impaired the credit of the industry and fastened the stigma of incompetence upon it; yet these years have awakened those concerned to needs and good will result. We will learn to value our trees, conserve them under reasonable expense, convert them with profit to the labor and capital employed and apply them to legitimate uses.

Putting the industry in order will mark the passing of the lumbermaker and the advent of the merchant-manufacturer. New organization, new methods, new capital and new brains will be applied. Together these forces will maintain The American Lumber Industry in a proud position among the industries of men. Its future is secure. It waits on large-scale production, maximum efficiency and cooperation.

A TALE OF THE TRAIL

MATT DALY

Mr. Daly's work in the logging camps of Minnesota is along the general lines of the other camp missionaries, except that he brings to it a very unique personality, which is absolutely essential to success in dealing with the class of men with whom he comes in contact. He is not a preacher, but he is something very much more effective; a man, who because of his own peculiar experiences, can meet the lowest on common ground, and influence them in the right direction. —Editor's Note.

This life's a middlin' crooked trail, and after forty years
Of knockin' around, I'm free to say that the right ain't always clear.
I've seen a lot of folks go wrong—Get off the main high road
An' fetch up in a swamp somewhere almost before they knowed.
I don't set up to be no Judge of right and wrong in men,
I ain't been perfect all my life and may not be again,
An' when I see a chap who looks as tho he'd gone astray,
I want to think he started right an' only lost his way.

I've seen a lot of folks start out with grit and spunk to scale
The hills that purple over there an' somehow lose the trail.
I've seen 'em stop an' start again, not sure about the road,
And found them lost on some blind trail almost before they knowed.
I've seen 'em circling, tired out with every pathway blind,
With cliffs before 'em mountains high, an' sloughs and swamps behind.
I've seen 'em circling through the dust when twilight's gettin' gray,
An' looking for the main road—Poor chaps who've lost their way.

It ain't far from right to wrong, the trail ain't hard to lose.
There's times I'd almost give my horse to know which one to choose.
There ain't no guides or signboards up to keep you on the track.
Wrong's sometimes white as snow, an' right looks awful black.
I don't set up to be no Judge of right an' wrong in men,
I've lost the trail sometimes myself and may get lost again.
An' when I see a chap who looks as tho he'd gone astray,
I want to shove my hand in his an' help him find the way.

CARE OF BIRD HOUSES*

By NED DEARBORN, *Assistant U. S. Biologist*

EACH spring before birds return from the South all filth and litter should be carefully removed from bird houses. In addition to the relics of previous occupancy, houses are likely to contain cocoons of insects, and nests of bees or squirrels. Attention to this one item of spring cleaning is a substantial factor in attaching birds permanently to their houses. A little sulphur scattered about a house is a good remedy for parasites. When bluebirds or swallows take possession of a martin house it is a good plan to put up a one-room house in the vicinity and remove the nest from the martin house. Interlopers, thus evicted, often transfer their housekeeping to the small house. Houses designed for woodpeckers should always have an inch or so of sawdust in the bottom for the reception of eggs, as woodpeckers do not gather nest materials. Due attention should be given to repairs. It is easier to keep houses in good order than to build new ones.

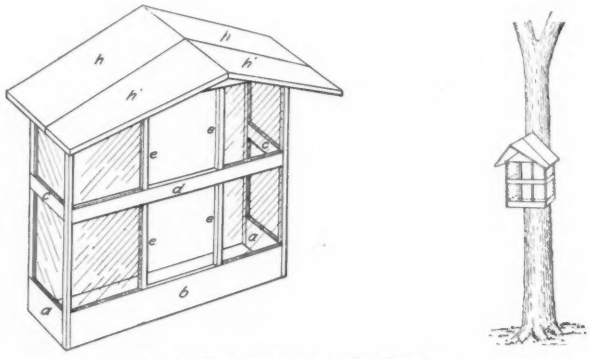


FIG. 1.—FOOD SHELTER FOR ATTACHMENT TO TRUNK OF TREE.

ENEMIES OF HOUSE BIRDS

Birds have numerous enemies from which a careful landlord will try to guard them. Among these is the English sparrow, whose persistent attacks too often drive more desirable birds away from their nests and from the neighborhood. European starlings, which at present are not distributed beyond a narrow strip of the Atlantic coast region centering about New York, are to be condemned for their pernicious interference with native house birds.

Cats and large snakes are enemies of birds, the former perhaps killing more birds than any other mammal. Trees and poles supporting houses should be sheathed with tin or galvanized iron to prevent these enemies from climbing to the nests. Squirrels give more or less trouble by gnawing houses, eating eggs, and killing nestlings. Red squirrels in particular, have a very bad reputation in this respect, and many experimenters keep their grounds free from them. Some regard flying squirrels as but little better than red ones. Even gray and fox aquirrels are occasionally troublesome. It is not necessary, however, that bird lovers should wage indiscriminate warfare against all squirrels. It is far better to adopt the rule never to kill a squirrel unless there is reason to believe that it has acquired

* From a Bulletin of the U. S. Bureau of Biological Survey.

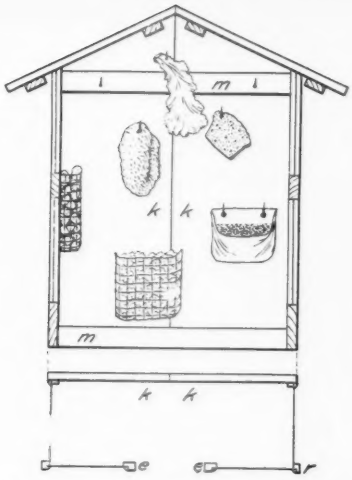


FIG. 2.—VERTICAL SECTION, SIDE TO SIDE, WITH SUGGESTIONS FOR LARDER; DIAGRAMMATIC AND CROSS SECTION OF FOOD SHELTER SHOWN IN FIGURE 1.

the habit of eating eggs of young birds; the result will probably be that not more than one red squirrel in fifty nor more than one gray squirrel in a hundred will have to be killed. Where squirrels are numerous they give more or less trouble by gnawing and disfiguring houses. This damage may be prevented, however, by covering the parts about the entrance with tin or zinc.

FOOD SHELTERS

Another means of attracting birds about human habitations is to furnish an abundance of food, preferably in food shelters. If one is unable to make shelters that will protect food in all kinds of weather, the food may be fastened to trunks or branches of trees or scattered in sheltered places on the ground. A decided advantage in having shelters, aside from that of protecting food, is that they may be placed where the birds can be watched conveniently. When shelters are used the birds are first baited by placing food, such as suet, seeds, or cracked nuts, in a conspicuous place, and then led by degrees to enter the inclosure. Designs for two food shelters are exhibited in figures 1 and 5, one of which is supported by a post, the other by a tree. Structural details are shown for both. There is no bottom to either of them.

LOCATION OF HOUSES

The location of a bird house or food shelter has much to do with its success, for the reason that birds have decided notions as to proper surroundings for a dwelling. Martins prefer to breed near houses, but not within 20 feet of trees or buildings. Bluebirds are inclined to select orchards or pastures having scattered trees. Wrens, thrashers, and catbirds live in thick shrubbery. Robins like trees with sturdy trunks and branches. Titmice, nuthatches, and most of the woodpeckers are woodland species, although flickers and red-headed woodpeckers are more at home among the scattered trees of roadsides and pastures. Song sparrows frequent weedy swales and brush fences. Swallows do not enter woods so that a house would be as attractive to them in one open

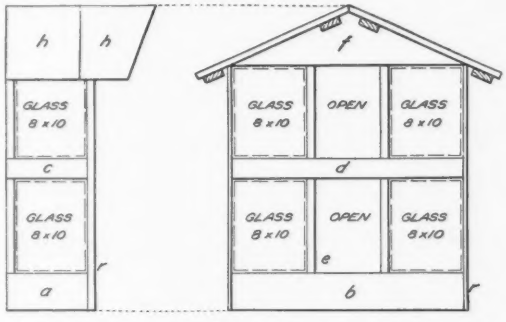


FIG. 3.—FRONT AND SIDE ELEVATIONS OF SHELTER SHOWN IN FIGURE 1.

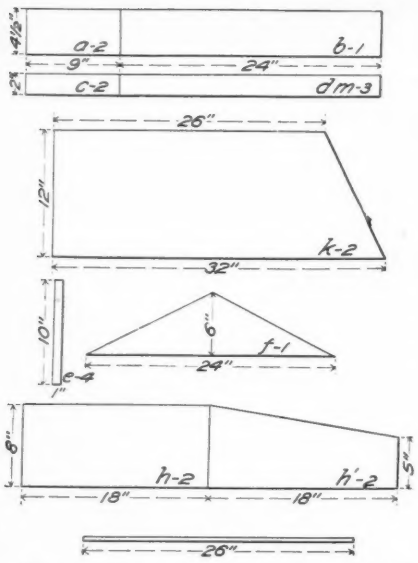


FIG. 4.—LUMBER DIAGRAM OF FOOD SHELTER SHOWN IN FIGURE 1.

place as in another. The eastern phœbe, the black phœbe, and the house finch, while not limited to the haunts of man, are noticeably partial to them. Crested flycatchers, screech owls, barn owls, and sparrow hawks are governed more by convenience than by taste; although normally inclined to hold aloof from man, they have in many instances reared their broods in close proximity to dwellings. Barn owls, true to their name, accept suitable quarters in buildings without hesitation.

Before erecting bird houses one should first determine the kind of birds to which his premises are adapted. The question usually next arising is as to the number of birds that can be accommodated. Unless grounds are large, it is generally useless to expect as tenants more than a pair of each species, except martins. However, the singular intolerance shown by most birds during the breeding season to others of their kind does not operate between those of different species. A dozen different kinds of birds will pursue their several modes of hunting and raise their families on the same lot, but rarely two of the same sort. The fact that birds are more tolerant toward strangers than toward relatives was well illustrated by an observation made recently by the writer in New Mexico. A one-story tool house 10 feet square had nailed to three corners of its roof rough bird houses made from packing boxes. One was occupied by violet-green swallows, another by western blue birds, and the third by English sparrows. A still more remarkable association of different species has been reported by Otto Widmann, of St. Louis, Mo., who once had a pair each of flickers, martins, house wrens, and English sparrows nesting simultaneously in the same

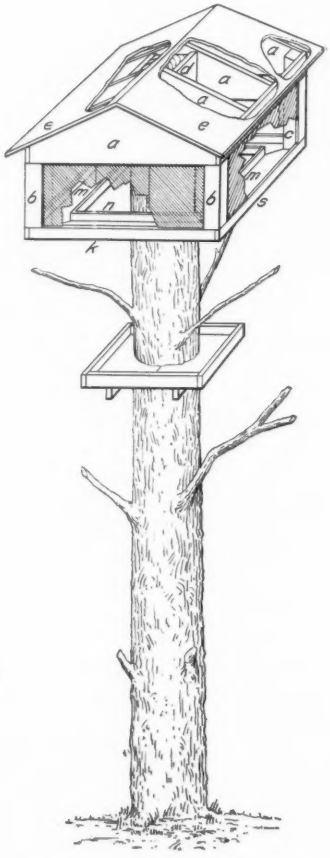


FIG. 5.—FOOD SHELTER FOR ATTACHMENT TO POST. ROOF CUT AWAY TO SHOW CONSTRUCTION. SIDES MADE OF GLASS; SIZE OF PANES 8 BY 10 INCHES.

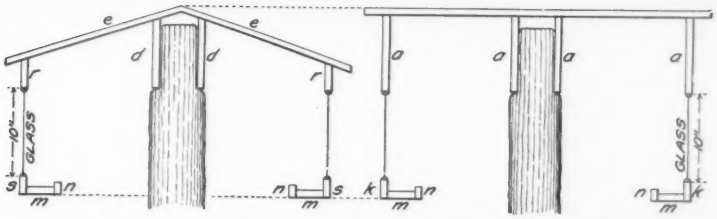


FIG. 6.—CROSS AND LONGITUDINAL SECTIONS OF FOOD HOUSE SHOWN IN FIGURE 5.

house. Of all our house birds, martins alone are social. The fact that there is a limit to the possible bird population on any given tract must be taken into consideration. When the probable tenants have been decided upon, the selection of sites is in order, for the site often decides the style of house that is to occupy it. In the final placing of bird houses, care should be taken to have them face away from the winds prevailing in stormy weather. The strongly developed homing instincts of birds can be relied on to attach them to the neighborhood where they first saw the light, and the identical pairs which nest in the houses provided for them one year will often return the next season to enjoy the same bounty and protection.

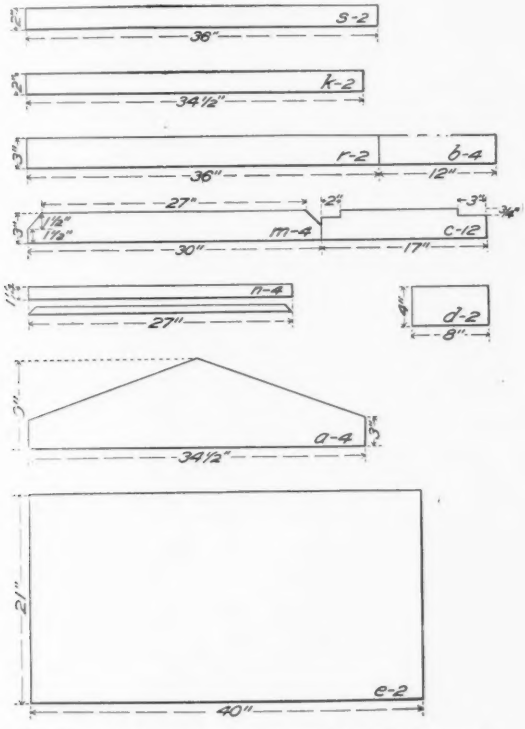


FIG. 7.—LUMBER DIAGRAMS OF FOOD SHELTER SHOWN IN FIGURE 5.

NATIONAL FORESTS USED

SELLING some billion and a half board feet of timber and supervising the cutting on several thousand different areas, overseeing the grazing of more than 1,500,000 cattle and 7,500,000 sheep, and building more than 600 miles of road, 2,000 miles of trail, 3,000 miles of telephone line, and 700 miles of fire line are some of the things which the Forest Service did last year, as disclosed in the report by Chief Forester Graves, for 1914. These activities were on the National Forests, which at present total about 185,000,000 acres.

There is need, says Chief Forester Graves, to increase the cut of timber from the National Forests wherever a fair price can be obtained for the stumpage, because a great deal of it is mature and ought to be taken out to make room for young growth. Unfavorable conditions in the lumber trade caused new sales of National Forest timber to fall off somewhat during the past year, though the operations on outstanding sales contracts brought the total cut above that of the previous year by 130,000,000 board feet. There was, however, a big increase in small timber sales, these numbering 8,298 in 1914 against 6,182 the previous year. Desirable blocks of National Forest timber have been appraised and put on the market, and it is expected that these will find purchasers when conditions in the lumber industry improve. All told, the Government received $1,304,053.66 from the sale of timber on the forests in 1914. The receipts from all sources totaled $2,437,710.21.

After eight years of experience stockmen are well satisfied, says the Chief Forester, with the way the grazing of livestock on the forests is regulated, and have even urged upon Congress the application of the same method of control to the unreserved public range. Almost 29,000 permittees graze stock on the National Forests, and these paid to the Government in the fiscal year 1914 fees amounting to over a million dollars. The present tendency to raise fewer sheep and goats and more cattle and horses is shown in the fact that the number of cattle and horse permittees on the western forests increased last year by 1,579, while the number of sheep and goat permittees fell off by a total of 268. The western stock business, the forester points out, is becoming attached to the soil, and the itinerant sheep grower and the speculator in cattle are giving place to the permanent resident and owner of improved ranch property. The latter is always given preference in the use of National Forest range.

Some $400,000 was spent by the Forest Service during the year for permanent improvements on the National Forests to make them accessible and to insure their protection from fire. These improvements include 270 miles of new road, 2,153 miles of trail, 3,063 miles of telephone line, 775 miles of fire line, and 106 lookout structures, besides bridges, corrals, fences, and cabins. In addition, 642 miles of road were built for the public by the use of 10 per cent of the National Forest receipts, as authorized by Congress.

Under another law, 25 per cent of the National Forest receipts for the year, amounting to $586,593.39, were paid over to the various States in which the forests lie for the benefit of county schools and roads.

Since 1909, when systematic classification of National Forest lands was begun, more than 10,000,000 acres have been eliminated. Scattered interior tracts which it is not practical to eliminate are opened to settlement through listing, which allows them to be taken up under the Forest Homestead Law. Anyone may apply to have land within a forest examined to determine whether it is best suited for agriculture, and if found so it is opened to settlement under this law. During the year 2,690 tracts, totaling 282,483 acres, applied for by individuals, were opened for entry. By elimination and listing the percentage of unpatented agricultural land within the National Forests, never large, has been reduced to a very small amount.

FOREST FIRE WARNINGS

This is the time of year when it is wise to post warnings against carelessness which may result in great forest fires and heavy losses. Models of such warnings are here given and any of these may be selected for use where they are suitable or new ones may be composed of the best and most desirable sections of those here reproduced.

As a basis for calling attention to the need of great precaution against fire in the woods the following rules are well worth remembering:

Rules for Care with Fire in the Woods.

1. Be sure your match is out before you throw it away.

2. Knock out your pipe ashes or throw your cigar or cigarette stump where there is nothing to catch fire.

3. Don't build a camp fire any larger than is absolutely necessary. Never leave it, even for a short time, without putting it OUT with water or earth.

4. Don't build a camp fire against a tree or log. Build a small one where you can scrape away the needles, leaves or grass from all sides of it.

5. Don't build bonfires. The wind may rise at any time and start a fire which you cannot control.

6. If you discover a fire, put it out if possible; if you can't, inform the nearest Forest Ranger or Fire Warden as quickly as you possibly can.

YOU CAN HELP!

PREVENT FOREST FIRES!

DON'T Drop Burning Matches or Tobacco in the Woods.

DON'T Build Fires in Brush or Leaves or Against a Rotten Log.

DON'T Leave a Fire Until You Are Sure It Is Out.

Exercise the Same Care With Fire in the Woods that You Do at Home.
If You Find a Forest Fire, Put It Out.
If You Can't Control It Alone, Get Word to the Nearest Town Supervisor.

You Must Help Protect the Forests and Timber

YOUR OWN INTERESTS DEMAND IT!
THE LAW REQUIRES IT!

CONSERVATION COMMISSION, ALBANY, N. Y.
AMERICAN FORESTRY ASSOCIATION, WASHINGTON, D. C.

FOREST FIRES

YOUR HELP IS ABSOLUTELY NECESSARY TO PREVENT WOODLAND FIRES.
READ THESE LAWS, OBEY THEM AND HELP ENFORCE THEM IN YOUR TOWN.
GET PERMIT FROM WARDEN BEFORE KINDLING FIRES IN SPRING OR FALL.
DO NOT THROW DOWN LIGHTED MATCHES, CIGARS OR OTHER MATERIALS.
NOTIFY THE NEAREST WARDEN IN CASE OF FIRE AND GET BUSY YOURSELF.

EXTRACTS—CONNECTICUT FOREST FIRE LAWS.

1. **Kindling a fire upon public or private land without permission** of the owner is subject to fine and imprisonment. See 1220 Gen. Stats.

2. **Kindling a fire in woodland without clearing space of 20 feet around it** is punishable by fine and imprisonment. Fires must be extinguished before leaving. Chap. 43 Pub. Acts 1907.

3. **Kindling a fire in the open air** which damages property of another is subject to fine and imprisonment. Chap. 128, Sec. 3, Public Acts 1909. **Persons setting fires which runs on land of another** are liable to the owner for all damages caused. Sec. 1096 Gen. Stats.

4. **Kindling a fire by throwing down a lighted match, cigar or other burning substance** is punishable by $500. fine or imprisonment six months or both. Sec. 1220 Gen. Stats.

5. **Permits required for kindling fires March 15th to June 1: Sept. 15 to Nov. 15.** Written permission from a local warden is required for kindling a fire in the open air except in a ploughed field, garden or public highway not less than 200 feet from woodland, brushland or land covered by dry grass or other inflammable material. (This law does not apply to kindling fires in cities, boroughs, organized fire districts, and on land controlled by railroad company.) Violation of this law is punishable by $200. fine or six months imprisonment or both. Chap. 124, Sec. 2, Public Acts 1911.

6. **Any fire warden may arrest without warrant** persons taken in the act of violating any laws for the protection of forest and timberlands. Chap. 238, Sec. 4, Public Acts 1905.

7. The law provides a penalty of $10. for injuring this notice. Chap. 238, Sec. 10, Public Acts 1905.

Posted by order of
WALTER O. FILLEY,
State Forest Fire Warden.

FOREST FIRES

BURNING BRUSH or **SETTING FIRE** in or near the woods **IS UNLAWFUL** throughout the year in this township **WITHOUT A WRITTEN PERMIT** from the local Firewarden. Penalty for violation, $50 to $200. A permit is not necessary if the fire is at least 200 feet from woodland or growth that may carry fire to the woods. Any legal **FIRE MUST BE WATCHED UNTIL** it is **ENTIRELY OUT.** Penalty for failure, $50 to $200.

To cause **A FOREST FIRE IS A VIOLATION OF THE LAW.** Penalty, $50 to $200.

A Firewarden's permit gives no release. Ignorance of the law is no excuse. Poor judgment or mishap relieves no one.

SMOKERS are warned that dropping lighted matches or tobacco in or near the woods may render them liable to this fine and do unguessed damage as well.

FIREWARDENS CAN ARREST ANYONE FOUND VIOLATING THE LAW

Small fires may grow larger and do your neighborhood much harm. Each fire stopped when small means increased property value to you and your neighbors. Put out at once any that you find, or, if you cannot do so, summon help. All such fire-fighters are paid for their work if the local Firewarden is told of and approves the service within ten days after the fire.

_____ Firewarden

_____ Township

4M-4-15-15

BY ORDER OF THE FOREST PARK RESERVATION COMMISSION OF NEW JERSEY,
STATE HOUSE, TRENTON.

FOREST FIRES
MENACE PROSPERITY

A Little Care on YOUR PART May Result in the Saving of THOUSANDS of DOLLARS to CITIZENS of OREGON

Do You Realize that Oregon Timber Pays About One-third of the State's Taxes?

That Oregon's Forests Distribute More Wealth in the State than Grain, Fruit, Vegetables and Fish Combined?

GOOD CITIZENSHIP DEMANDS OBSERVANCE OF THE FOREST FIRE LAWS

OREGON FOREST FIRE ASSOCIATION
718-719 Yeon Building, Portland, Oregon

STOP

You Are Interested In This Notice. Read It.

You can help save California millions of dollars yearly by being careful in the use of fire. Remember that for every 1000 feet of timber burned it means a loss to you and the community of over $8.00 while the owner's loss will be $1 or $2.

Observe The Following Rules

Never to burn brush, grass or slashings during the dry season without a permit from the fire warden. Never leave a camp fire until it is out. Don toss away any matches or tobacco. Don't make a camp fire in leaves, rotten wood or against a log—keep a clear space around your fire. If you find a fire put it out if you can, if not, notify a Fire Warden or State Forester at once. Care with small fires means few large ones. Be as careful with fire when out in the forests, as you would be in your own home

The Law and Good Citizenship Require Observance of These Rules. HELP ENFORCE THEM

Redwood Fire & Protective Association
Fort Bragg, California

FORM 1

State Board of Forestry

NOTICE

All Hunters, Trappers, Fishermen, Campers, Surveyors, Land Locators, Travelers or other persons, are required by Section 4405a, Statutes of 1893, to totally extinguish ALL FIRES BUILT BY THEM before leaving them and to use all possible precautions to prevent the escape of the fire from their control at any time.

A fine of not more than 50 DOLLARS OR IMPRISONMENT IN THE COUNTY JAIL not more than six months for each offense is imposed by said section for failure to comply with its provisions, and all violations will be vigorously prosecuted whenever detected.

E. M. GRIFFITH,
State Forester.

NOTE--Any person who destroys or removes this warning notice is punishable by a fine of from $15 to $200, or by imprisonment from 10 days to 3 months, or by both fine and imprisonment.

ROOM FOR 5,000,000 SHADE TREES

THE New York State College of Forestry at Syracuse University is urging the municipalities of the State to take up public control of street tree planting and preservation in the same manner as public control is exercised over other street improvements. During the past year the College has made investigation of the shade trees in many cities and towns of the State including New York city, Syracuse, Binghamton, Amsterdam, Mount Vernon, Newburgh and Olean. It has been found that thousands of shade trees are dying along the streets of the cities due to past mistake in selection of varieties and in spacing the trees at the time of planting, which has forced the trees to grow with weakened vitality, inviting decay by tree diseases and by the attacks of insect pests. There is a great need for systematic work in planting trees to replace those that have failed to fill in the many unplanted areas along city streets. It has been estimated that within the cities of the State there are 20,000 miles of streets capable of sustaining a growth of 5,000,000 shade trees which can be made worth $100,000,000 in increased property value.

Pine Used by Box Industry.

White pine and yellow pine are the woods most used for boxes, and each contributes more than a billion feet to the box industry annually.

British Columbia's Timber Protection.

The annual cut of British Columbia timber is approximately two billion feet. There are 420 mills and 790 logging camps in the province, employing about 60,000 men.

SELECTING TREES AND SHRUBS

ONE HALF of the success of growing shade trees and ornamental shrubs is in selecting the kind of trees and shrubs best suited to soil and climatic conditions. These vary greatly in different sections of the United States. The following tables have been prepared in order to aid as much as possible in making this selection of trees and shrubs best suited for general use on private grounds, streets, private parks and school yards.

For New England States, New York, Pennsylvania, New Jersey, Ohio, West Virginia, Kentucky, Indiana, Michigan, Illinois, Missouri, Iowa.

Deciduous Trees	*Evergreen Trees*	*Shrubs*
Sugar maple	White spruce	Lilac
Norway maple	Colorado blue spruce	Exochorda
Scarlet maple	White pine	Viburnums
Green ash	Scotch pine	Philadelphuses
White ash	Balsam fir	Hydrangea
American white elm	Hemlock	Japan quince
Red oak	Arbor vitae	Flowering currant
White oak		Calycanthus
Pin oak		Cornuses
American linden		Spiareas
Scarlet oak		Weigela
		Coral berry
		Snow berry
		Sweet pepper bush
		Loniceras
		Wild roses
		Rosa rugosa
		Barberries

For Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Tennessee, Florida, Alabama, Mississippi, Louisiana, Arkansas, Oklahoma, and Texas.

Deciduous Trees	*Evergreen Trees*	*Shrubs*
Tulip	White pine	Golden bell
Sycamore	Long-leaf pine	Lilac
Pin oak	Magnolia	Eloeagnuses
White oak	Live oak	Loniceras
Scarlet oak	Cedar of Lebanon	Hibiscus
Black oak	American holly	Roses
Red oak		Japan quince
White ash		Calycanthus
Bald cypress		Smoke tree
Norway maple		Viburnums
Scarlet maple		Jasmines
Red elm		Hydrangeas
American white elm		Crape myrtle
Kentucky coffee		Cornuses
American linden		Spiraeas
Catalpa		Privets
Liquidambar		Barberries
Hackberry		Hollies
Sour gum		Abelia
Willow oak		
Camel oak		

South of Charleston, S. C.—Camelia, japonica, prunas caro, liniana (mock orange), oleo fragrans, Bay trees, Azalea Indica, Viburnum Finus.

For Wisconsin, Minnesota, North Dakota, South Dakota, Nebraska, Kansas, Colorado, Wyoming, Montana and Idaho.

Deciduous Trees	*Evergreen Trees*	*Shrubs*
Bur oak	Scotch pine	Lilac
Linden	Austrian pine	Barberry
Norway maple	White pine	Cornus
Green ash	Norway spruce	Tamarix rensis
Wild cherry	Colorado blue spruce	Japan quince
Larch	White spruce	Rosa rugosa
American elm	Red cedar	Crataegus
Black walnut	Arbor vitae	Eloeagnus hortensis
Hackberry		Shepherdia argentea
Honey locust		Wild Roses
Black locust		Missouri currant
		Coral berry
Less desirable—Cottonwood, catalpa, box elder.		Spiraeas

For New Mexico, Arizona, Utah and Nevada.

Deciduous Trees	*Evergreen Trees*	*Shrubs*
Hackberry	Arbor vitae	Althea
Honey locust	Cedrus deodara	Wild rose
Green ash	Box	Spiraeas
American elm	Euonymus	Flowering currant
Black locust		Elder
Bur oak		Lilac
Valley cottonwood		Tamarix
Mountain cottonwood		Rosa rugosa
Mountain ash		Thurbergi barberry
Box elder		Privet
		Coral berry

For California, Oregon and Washington.

Deciduous Trees		*Shrubs*	
Coast Region	*Columbia Basin*	*Coast Region*	*Columbia Basin*
Large-leaved maple	Scotch elm	Roses	Lilac
Tulip tree	American elm	Weigela	Hardy roses
Mountain ash	Norway maple	European holly	Philadelphus
European linden	European linden	Lilac	Eloeagnus hortensis
Sycamore	Sycamore	Laburnum	Laburnum
Weeping willow	Green ash	Deutzia	Spiraea
	Silver poplar	Hydrangea paniculata	Tamarix amurensis
	Russian poplar	Mock orange	Rosa rugosa
	White willow	Japan quince	Barberry

PLANTING SUGGESTIONS

The beauty of a shade tree depends upon its normal and symmetrical growth. In order to insure this, before planting cut off the ends of all broken or mutilated roots; remove all side branches save upon evergreens, so that a straight whip-like stalk alone remains.

Dig holes at least 3 feet in diameter and 2 feet deep in good soil, and make them 4 feet across in poor soil. The sides of holes should be perpendicular and the bottom flat. Break up soil in the bottom of the hole to the depth of the length of a spade blade. Place 12 or 15 inches of good top soil on the bottom

and use the fine top soil, free from sods or other decomposing organic matter, about the roots. On top of this place the roots of the tree, spread them as evenly as possible over the earth, put in and cover with 2 or 3 inches of fine top soil. Tramp firmly with the feet and fill the hole with good earth, leaving the surface loose and a little higher than the surface of the surrounding soil. When the work of planting is completed, the tree should stand about 2 inches deeper than it stood in the nursery.

In order to insure symmetry of growth, trees must be allowed unrestricted area for development. At least 40 feet should be allowed between trees intended to occupy the ground permanently. Quick-growing temporary trees may be planted between the long-lived ones to produce immediate results, but because of the probability they will not be removed as soon as they interfere with the development of the permanent plantations, this practice is not to be recommended.

Our Association at the Exposition

It is expected that a large number of members of the American Forestry Association will attend the meeting of the Association at the Panama-Pacific Exposition at San Francisco on Wednesday, October 20. This will be officially known on the program of the Exposition as American Forestry Association Day.

During the same week will occur meetings of the Society of American Foresters, the Western Forestry and Conservation Association and the Pacific Logging Congress. Thus there will be gathered at San Francisco during the week representatives of forestry interests from all over the United States and Canada.

The program will be announced in good time and other details will be stated in AMERICAN FORESTRY before the gathering. Many members of the Association who plan to attend the Exposition will arrange to do so at a time when they can also attend the Meeting of the Association.

Change in Address

Members of the American Forestry Association are requested to send notification of any change in address so that the AMERICAN FORESTRY MAGAZINE and other mail will not be delayed in reaching them.

Such notices are desired before the 25th of each month so that the address may be changed for the monthly mailing of the magazine.

CONNECTICUT FORESTRY MEETINGS

AN INSPIRING series of forestry addresses were presented on the eighth and ninth of March at Middlebury and Waterbury, Connecticut, under the auspices of the American Forestry Association, in cooperation with the Forestry Associations of Pennsylvania, Connecticut, Massachusetts and New Hampshire.

A most forcible address was presented by Dr. J. T. Rothrock, the first Commissioner of Forestry in Pennsylvania, and for many years an active member of Pennsylvania's Forest Reservation Commission, who with a striking series of lantern pictures, showed the desolate condition on the hills of Pennsylvania outside of the one million acres of forest reserve that that State has purchased. The force with which this address brings home the approaching scarcity of timber in this country may be inferred from the fact that Mr. Herbert Welsh, of Philadelphia, who had previously heard this address in Witherspoon Hall in that city, has had 10,000 copies printed, fully and attractively illustrated. It may be had by sending 5 cents postage to Mr. Herbert Welsh, 995 Drexel Building, Philadelphia, Pa.

Mr. S. B. Elliot, of Pennsylvania, read a very able article on "Our Forest Conditions and Needs." Mr. Elliot's deep interest in forestry, his long experience as an active member of the Pennsylvania Forestry Reservation Commission, and his wonderful vigor and power of thought and expression in the evening of a life devoted to forest interests, gave to his address a personal touch and force that was very impressive.

Another strong address was that of Professor J. W. Toumey, Director of the Yale Forest School, upon State and Town Forests. He pointed out that it is unwise in this country to depend upon private individuals for a future timber supply. This matter of saving the remnants of our forests must be taken up through State enterprise, and it is even now too late to grow a new crop of trees before the scarcity will be upon us. State planting on a large scale should begin without further delay.

Able addresses from other parts of New England, by Mr. Harris A. Reynolds, Secretary of the Massachusetts Forestry Association, and Mr. Philip W. Ayres, Forester of the Society for Protection of New Hampshire Forests, showed the same general conditions in New England that Dr. Rothrock pointed out in Pennsylvania. Mr. Ayres' address was illustrated with pictures thrown on the screen showing scenes from the National Forests in the White Mountains, the Southern Appalachians and on the Pacific coast.

It was the concensus of opinion of all present that larger and more important efforts to conserve the remnant of forests that remains in this country, and to replant on a large scale, must be taken immediately by the Towns, State and Federal Governments.

It was also pointed out that under the Weeks Act $3,000,000 did not become available, and that an effort should be made in the next Congress to reappropriate this amount in order that the original plans of the Act may be carried out in the White Mountains and the Southern Appalachians. The friends of forestry everywhere are urged to lend their help to secure this measure at the next session of Congress.

The three sessions were presided over by Mr. Herbert Welsh, of Philadelphia; Mr. Frederick J. Hillman, of Springfield; and Dr. Henry S. Drinker, President of Lehigh University and of the American Forestry Association.

Hon. Robert S. Conklin, Commissioner of Forestry in Pennsylvania, Mr. Walter O. Filley, State Forester of Connecticut, and a number of others prominent in the forestry movement were present.

EDITORIAL

NO POLITICS IN THIS FORESTRY WORK

COMPLETE vindication in the recent Oregon Legislature of the principle that State forest work should be both independent of politics and independent of other State activities should be a lesson to other States where these points are at issue.

Oregon has more timber than any other state; indeed it has a fifth of all the timber in the United States. Forest industry employs nearly two thirds its industrial population. Consequently its forest laws are important. It has a Board of Forestry wholly non-political, consisting of representatives of the several chief interests involved such as the timber owners' patrol organizations, the lumber manufacturers, the U. S. Forest Service, the State Forest School, the Grange, etc. These elect the State Forester and govern his administration. There is a compulsory patrol law making every forest owner do his share. The State policy is to coordinate State, Federal and private protective effort under a cooperative system in which each has due representation. Forest owners are encouraged to organize and have voice in this system. Funds for patrol are jointly contributed and jointly spent. The system is efficient. Fire losses are negligible.

In the recent Legislature there were many attacks on this system. Reluctant timber owners who sought protection without expense secured the introduction of a bill abolishing compulsory patrol. They believed their neighbors would continue the work for them. Another bill sought to do away with State Forest work entirely, theoretically to save expense to the tax payer but actually as a "sandbag" measure to secure control through compromise. A third proposed to make the Board and the State Forester politically appointive, in order to build up a patronage machine. A fourth was for consolidation of forest work with the State's land and water work.

Each of these supported its contention by attack upon the existing system, resulting in the presentation of every conceivable argument and charge involving its principle, administration and personnel. All had the favorable auspice of an "economy Legislature" listening willingly to any criticism of an appropriation-supported institution. The fighting was sharp and prolonged throughout the session.

The result was a rally of almost the entire population of the State to the support of the existing non-partisan independent system. Lumbermen, business men, women's clubs, organized labor—indeed practically every element—protested against change. The Governor himself declared against putting forest work into politics, even under his own appointment. The attempt to consolidate forestry with other State Boards was greeted with such indignation that it was repudiated by the very committees appointed to seek consolidation in State work wherever this should be practicable. The system went before the people on its principle, record, and achievement and was triumphantly sustained without a single change. And Oregon is a Forest State, with plenty of bitter experience in matters of forest protection.

FORESTRY AND INDEPENDENCE

SOME states, after securing a State Forestry Board which is independent of other State boards, independent of politics and independent of any affiliation or condition which detracts from its best service for the good of the public, make the grave mistake of endeavoring to combine such departments with others. Invariably such change has

resulted in more or less incompetent management and proved costly to the state.

Despite this, efforts to secure changes from present systems, which are effective, to others which have proved to be ineffective, are being made in some states at the present time.

The men who favor such changes would do well to read the following extract from a letter written by Mr. E. T. Allen, a Director of the American Forestry Association, to a member of the Oregon House Committee on the proposed consolidation of the State Forestry Board with other boards in that State.

After stating that the present board is unsalaried, that its work does not overlap any other State work, and that its work is most important owing to the great value of Oregon's forest resources, Mr. Allen goes on to tell of its duties. He says:

"The purpose and duties are most specific and real, as the minutes of past meetings will show. The board has not only to obtain competent non-political officers to protect life and property, but to deal with live, practical and difficult problems where error or neglect would be very costly to the State. The protective work must be with full understanding of, and in harmonious cooperation with, that of private owners and the Government. The laws must be administered with justice alike to struggling settler and wealthy timber-owner. To a very large extent, therefore, the board's work is technical, requiring special competence in the beginning and improving directly with attention and experience. This forest State particularly needs the building up of such a board. No inexperienced ex-officio service will suffice.

"There is no political significance under the statutory composition of the board. Its membership cannot become a political reward; its own composition precludes the use of its authority to build a political machine or spend State funds to pay political debts. It is the one board in the State absolutely free from political possibilities.

"So it seems to meet every count. Now let us consider the danger of change—the same danger that has wrecked the forest work of many other states.

"There are practically only three other methods: (a) a Governor's straight appointive board; (b) an ex-officio board of selected State officials; (c) a combination of existing boards having some theoretical relationship. The first is necessarily political, or capable of being made so, and is satisfactory to no one but the "ins." Even to them it may prove embarrassing. Such boards have never done good work long, especially when involving a large paid force. The ex-officio board of State officials is practically useless or worse. Being busy and without interest or technical knowledge, its members give the State Forester no real help. If they do anything, it is to exert political pressure without even understanding its influence.

"The third method, that of combining all the State's relations to natural resources under one board, has more plausibility than the other two but has always failed in practice for certain unavoidable reasons. First of these is the impossibility of getting competence in any one line as a *board*, however competent each member is in his own specialty. The very proficiency which has led to appointment of a fish member, or a mining member, or a forestry member, means he has specialized too much on that to understand the other things. *So whatever the topic before the board, it is acted on by a majority that does not understand that topic.* There cannot be a competent majority on any, if the board is fairly chosen. If it is not so chosen and there is a fish, forestry, or other majority, then obviously the minority subjects always suffer. This is an inherent weakness in a mixed topic board of *technical nature*. It is doubly dangerous if the funds are also made general. Finally, the combined board of this kind always manages, if it makes a mistake in any subject, to bring down public disapproval on all. For example, if you combine forestry with fish and game work and the latter makes enemies, the latter will fight the forestry appropriations, too, in order to punish the

board. With these weaknesses to contend with even if politics is kept out, and with the added danger of marrying political troubles, too, our present efficient forestry system would be sure to suffer, as it always has elsewhere, if it is tied to anything else. It is looked at as a model now. Why endanger it?

"Finally, there is one thing which differentiates State forest work from all other State work. This is that under the modern development of forest protection, the latter is not purely a State function any more than it is a private or Federal one. The three protective agencies cooperate, at great mutual advantage in economy and effectiveness. They act together as a sort of board of public welfare. While the State runs its business independently in most functions, it cannot in this. Therefore, it must have its Forestry board so constituted as to deal most effectively with the other two agencies. As these are purely forestry agencies, the present system is logical and harmonious. A combined board would have no such simple machinery.

CANADIAN DEPARTMENT

By ELWOOD WILSON

The most important need of forest protection in Canada at present is that the Government owned and operated railroads, The Intercolonial, International and National Transcontinental, should have an adequate fire protection system. As they run for the most part through heavily forested areas and on the eastern section of the National Transcontinental there is no possibility of any freight except that which comes from the forest and its products.

Last August the management of these roads issued orders to their roadmasters, section foremen and train crews to keep a sharp lookout for fires and to extinguish them wherever found. Everyone who has ever had any experience with section men knows that they have so much other work to do and so many miles of track to keep in order, that without proper inspection, they will not pay much attention to forest fires. This matter is considered so important that the following important bodies have taken action and have written the Hon. Frank Cochrane, Minister of Railways and Canals, asking him to make effective the same regulations on the Government Railways which have proved so successful on privately owned railroads under the jurisdiction of the Dominion Railways Commission. The Canadian Forestry Association, the Department of Lands and Forests of Quebec, the Quebec Limit Holders Association, the St. Maurice Forest Protective Association and Sir William Price. The Conservation Commission has for two years been urging the same action. The regulations mentioned above, require that a competent inspector shall have supervision of fire protection work, that during dangerous times extra patrols in addition to section men shall patrol the right-of-way and that the same shall be properly clean of all débris and inflammable material. In an interview had with Mr. Cochrane in January by a committee of the Canadian Forestry Association, he said that he wanted to do all in his power to aid the cause of forest protection and to save Canada's forests and it is hoped that everyone who has any interest in this important matter will write the Honorable Frank Cochrane, Minister of Railways and Canals, asking him to take prompt action along the above lines before the middle of April, when the danger season commences.

The Railway Commissions regulations have been so practically framed and under its system of inspection so well carried out that forest fires from railroads privately owned have materially declined and will soon be a thing of the past. The Canadian Pacific Railway has gone at this matter with characteristic vigor and under Mr. A. D. MacTier, assisted by Mr. B. M. Winegar, has built up a splendid system of fire protection which bids fair to wipe out fire claims at an early date.

Mr. Piché, Chief Forester of the Department of Lands and Forests of Quebec, has just completed some valuable tables which should be distributed to the lumber companies and limit holders. These are a table of the contents of tree in board feet measure based on the measurement of 4,525 trees and giving the amounts which can be deducted for different defects: also tables showing the total number of board feet contained in balsam, white and black spruce trees, based on measurements of 2,187, 2,886 and 1,638 trees, respectively.

The following gentlemen have been elected to the Canadian Society of Forest Engineers, active member, Mr. Gutches, Forest Supervisor for Alberta, and for associate membership, Mr. Geo. Tunstell, Mr. Davis W. Lusk, Jr., Mr. Geo. S. Smith and Mr. W. J. Boyd, all of the Dominion Forest Service.

Mr. A. K. Shives, Forest Assistant, Fort George, B.C., has just been making a trip to the East and congratulations are being extended to him by his friends because of the rumor that he is buying two tickets for the return journey, on which he visited the Forestry Department of the Laurentide Co. and looked over the work at Grand' Mere.

The Hon. Jules Allard, Minister of Lands & Forests, Quebec, has been in poor health for some time and in March made a trip to the Expositions at San Diego and San Francisco. The Minister is always progressive where forestry matters are concerned and has made a grant of $300 to issue in cooperation with the St. Maurice Forest Protective Association, a small leaflet on preventing forest fires, which will be distributed to all the school children in the Province, both French and English. He has also under way a bill to be introduced in the next session of the Legislature, regulating the taxation of planted lands.

Mr. Avila Bedard, Assistant Forester of Quebec, has just published a very interesting article in the French Review "La Nouvelle France," called "L'influence immaterielle des forets" dealing with the influence of the forest on poetry, prose, philosophy, religion and civilization.

Chancellor Jones, of the University of New Brunswick, has taken an active part in the work to have the Intercolonial Railway placed under the Railway Commissions Forest Fire Regulations and has done much to forward the cause of forestry in his Province.

Mr. R. F. Grant, Manager of the St. Maurice Lumber Company, has just returned from a trip into the woods and reports having seen two large wolves caught in traps in one of his logging operations on the Trenche River. Wolves are increasing in this section.

Mr. F. A. Sabbaton, Assistant Manager of the Laurentide Company, was taken suddenly ill with appendicitis about 10 days ago. He was successfully operated on at the Western Hospital in Montreal and is making a rapid recovery.

Early in February Mr. Cowles, of W. H. Parsons & Company, of New York; Mr. Hart, of New Haven, and Mr. Rothery of New York, made a trip to The Parsons Company's holdings in Quebec and New Brunswick to look them over and to consider a new system of management and control of logging operations. They also visited the Brown Company at La Tuque and The Laurentide Company at Grand' Mere. At the former place they had a very exciting time on the toboggan slide which has a drop of about 90 feet in the first 200 and one slide is said to be enough for one day.

W. R. Brown, of The Berlin Mills Co. and Director of the American Forestry Association, was in Quebec on his way to look over some of his logging operations in Quebec. Mr. Brown takes a very active interest in forestry matters in Canada.

At the Annual Meeting of the St. Maurice Forest Protective Association held in Three Rivers, Quebec, on the fourth of March, a very satisfactory showing was made. Mr. R. L. de Carteret, of the Brown Company was elected President; Mr. Ellwood Wilson, of The Laurentide Company, Vice-President; Mr. Henry Sorgius, Secretary-Treasurer and General Manager, and Messrs. R. F. Grant, of the St. Maurice Lumber Company, J. M. Dalton, of the Union Bag & Paper Company and Gres Falls Company, Charles Lebrun, of the Belgo-Canadian Pulp & Paper Company, and Frank I. Ritchie, of the Wayagamack Pulp & Paper Company, were elected Directors. The Tourville Lumber Mills Company withdrew from the Association because one of their foremen was not allowed to use the Association's fire rangers to take him around on his woods trips and do other work besides fire-ranging. In the old days fire rangers were used as depot keepers, canoe men, guides, dam keepers, etc., and consequently fires were frequent.

The Laurentide Company will continue its planting operations this Spring on wild and burnt overlands, putting in about 750,000 trees, mostly Norway spruce, 3 year old seedlings planted about 1,700 trees per acre. The trees, planted last year did remarkably well making an average of over 6 inches in height for the season.

Mr. Gustave A. Kuhring, a graduate of the Forestry Department of the University of New Brunswick, has enlisted with the Third Canadian Contingent.

The Report of The Dominion Parks' Commissioner has just been issued and is a very interesting book, excellently illustrated. The number of people who visit and use these parks is surprisingly large and shows what a National asset they are, bringing people from all parts of the world. The reports on the wild animals, buffaloes, elk, moose, antelope, deer and so on are delightful reading and the pictures of scenery are well worth looking at. Any one who wishes an interesting place to spend the summer should write for a copy of this report.

New war tariff on lumber entering Canada has been increased on practically every sort by 7½ per cent. This will somewhat help the cause of conservation in Canada by raising the prices for home grown timber.

At the request of the Dominion Parks Branch the E. B. Eddy Company, of Hull, is now printing in striking colors and attractive design on their match boxes an effective fire notice, warning the public not to throw away burning matches, especially in the woods. The Eddy Company is also installing machinery to impregnate their match sticks so that after the head and a small portion of the stick has burnt the rest will not glow or burn.

The Canadian Pacific Railway has also posted warning notices in its cars urging smokers not to throw lighted matches or cigar or cigarette butts out of the windows.

The Annual Meeting of the British Columbia Loggers' Association was held recently at Vancouver and elected Mr. J. M. Dempsey as President; Mr. I. A. Bearce, Vice-President, and Mr. James R. McGrath, Secretary-Treasurer.

Mr. Maurice Leahy, late with Geo. F. Hardy, Consulting Engineer, of New York, has been appointed Manager of the Abitibi Power and Paper Company, at Iroquois Falls, Ont. The works are located 350 miles north of Toronto and 200 miles south of Hudson's Bay where a new town is springing up. Mr. Leahy worked on the construction for the Laurentide Company at Grand' Mere and was an enthusiastic golfer, winning all the competitions during the season.

One of the problems which the lumber companies in Quebec are trying to solve is how to get a supply of good men for scaling, superintending drives and such work. Men of fair education are no sooner broken into the work than they get tired of the woods, or get ambitious and leave. The pay is good, $75 per month and expenses, and the conditions of work are excellent, good camps in winter and on the drives and in the towns in summer. The work at first for the grade of assistant, is hard but gives a man good experience and when he is promoted to scaler, it is still hard but more interesting and with more responsibility. On promotion to inspector the work is easier and more varied. The life is somewhat similar to that of a "Ranger" in Europe or the West but here of course a knowledge of both French and English is essential. A Ranger School properly run would be a great thing for the Province.

BRITISH COLUMBIA NOTES

Mr. C. MacFayden, formerly District Forester at Tete Jaune, is now heading a private exploration party in the Peace River country. He recently visited Victoria and in talking about the country said that the journey from Fort George over the Giscombe Portage and down the Crooked, Pack, Parsnip and Peace Rivers is one of the finest canoe trips imaginable. He and his partner used an 18-foot Chestnut canoe and were delighted with it.

P. S. Bonney, formerly Forest Assistant at Fort George, is now Acting District Forester at Tete Jaune.

H. B. Murray, formerly Forest Assistant at Cranbrook and Acting District Forester at Tete Jaune, is now Acting District Forester at Kamloops.

P. Z. Caverhill, recently District Forester at Kamloops, is now Deputy District Forester at Vancouver. This change is in the nature of a promotion for Mr. Caverhill, the forest management work in the Vancouver district amounting to about two-thirds of that in the entire Province.

J. B. Mitchell, who was Deputy District Forester at Vancouver, has enlisted for active service in the Army Service Corps, Vancouver, which is expected to leave for England in the near future.

F. McVickar, Forest Assistant, went with the First Contingent, and is now probably in France. His address is—A Squadron, Royal Canadian Dragoons, Care of War Office, London.

G. Melrose is now assigned as Forest Assistant to the Vernon District.

The Forest Branch has so far lost, only temporarily it is hoped, upwards of a dozen members of its permanent force through enlistment for active service. Some of them are already at the front, others are on their way, and the remainder will be leaving with their battalions in the near future. Their names are as follows: J. B. Mitchell, Deputy District Forester; F. McVickar, Forest Assistant; Wm. Black, Ranger; M. M. Gibson, Ranger; M. V. Allen, Ranger; F. Edwards, Ranger, J. Turnbull, Ranger, T. Brewer, Ranger, J. Milroy, Check Scaler; J. Ketteringham, Clerk; J. R. Stone, Draughtsman; J. Eddie, Messenger. In addition to the above men a fairly large but unknown number of Forest Guards and patrolmen have enlisted for active service.

A reconnaissance of the Pine River and Upper Parsnip River last summer resulted in the discovery of thirteen billion F. B. M. of valuable spruce and balsam fir timber. This timber is all directly tributary to the extension of the P. G. E. which is to be built through Pine Pass. It will form a very valuable future timber supply for the prairie market.

During the past year roughly 48,000,000 feet of saw timber was sold by the Forest Branch at an average stumpage price of $1.15 per thousand over and above royalty of 50 cents. For the most part these sales were small fractions which would be logged inside of one or two years and a large proportion of them were in the Coast District, where Douglas Fir, Cedar and Western Hemlock predominate. A total of 67,000 acres was closely cruised for timber

sale purposes during the year, on which there was an estimated stand of 560,000,000 feet.

Land classification is carried on by the Forest Branch for the following three-fold object: (1) To prevent alienation of land valuable chiefly for timber. (2) To make available for settlement all areas suitable for agriculture. (3) To hold under reserve lands which are unfitted for agriculture. The area which has been so classified during the past year is close to half a million acres, of which 170,000 acres have been reserved, carrying a stand of timber of approximately one billion feet.

On the first of January the B. C. Log Scale came into use over the entire Province, in accordance with the Provisions of the Royalty Act. This rule has been in use for a number of years on the Coast, but the Doyle Rule has been, until now, the accepted rule for that portion of the Province east of the Cascade Mountains. This change will make a uniform scale available for the whole Province, and will appreciably increase the log scale for the Interior.

FOREST NOTES

The Minnesota House and Senate Committees have recommended for passage a bill providing $20,000 a year for two years to purchase land for improving the City Park, the plan being to supplement the present park system by a great municipal forest or forest park. The Jay Cooke estate has turned over to the State 2,500 acres of forest land for use as a park by the city of Duluth and it is proposed to acquire, 3,500 acres adjoining this tract, which is valueless for general agricultural purposes. The plan is to use this Municipal Forest for camping, rest and recreation and to manage it by the most approved forestry methods with the thought that in time it may become as valuable an asset to the City as are some of the German Municipal Forests. One plan is to have homes in the forest for the families of workingmen, homes that may be had for a nominal rent and where the City would have control of every arrangement which might tend to make such places most desirable in every way. A number of the leading residents of the city are most enthusiastic over the plan and the possibility of its being adopted.

The E. B. Eddy Company of Hull, Canada, match manufacturer, is aiding in the work of forest fire protection, by printing on their match boxes a circular design in three colors, red, green and white, bearing the words: "Safety First Applied to Fire—Do Not Throw Away Burning Matches Especially In The Woods." Underneath the design is the statement that it is printed by request of the Dominion Government.

Purley D. Bailey, a young Forester, and son of Prof. George D. Bailey of Cazenovia, N. Y., disappeared on March 8, and foresters are asked by his anxious father to aid in the search for him. The young man, who was suffering from nervous trouble, left his home to go to Syracuse for a treatment and has since then been missing. He is 5 feet 6 inches tall, complexion deeply tanned, brown hair and brown eyes. He wore a gray suit, mixed gray and black shaggy overcoat with brown fur collar and a gray hat. He is a member of the Phi Gamma Delta fraternity.

The Class in Lumbering of the New York State College of Forestry under Professor Nelson C. Brown has returned from the trip to several logging and milling operations in the Adirondacks, including Conifer, Cranberry Lake, Piercefield and McKeever. A careful investigation and study were made of the logging operations of the Emporium Forestry Company on their 85,000-acre tract in St. Lawrence county and their sawmill and yards at Conifer near Childwold.

The third annual session of The New York State Ranger School at Wanakena, N. Y. has opened under the direction of Professor E. F. McCarthy. Twenty-two students have enrolled for the one year course of instruction in forestry and are now actively engaged in practical forestry work in the field.

Arbor and Highway Day in Maryland, April 9, has this year a special significance, because it is the first anniversary of the passage of the Roadside Tree Law by the Legislature of 1914. This law places all trees now growing beside the roadways or along the streets of incorporated towns under the supervision of the State. In addition to the care and protection of existing trees, the law provides for the planting of new ones.

The State has spent approximately $15,000,000 in constructing improved roads which compare favorably with any in the country. The next step in their improvement is to beautify them and make them more attractive by the planting of shade trees. What is more attractive than a well-shaded street or roadway, particularly if the trees are uniform in size and kind, giving a distinctive character that cannot be obtained except by systematic effort and the execution of carefully thought out and well executed plans? The State Board of Forestry, which is charged with the administration of the Roadside Tree Law, is prepared to cooperate with towns, associations and individuals in the work of planting trees along the streets and highways.

The Pennsylvania Lumbermen's Association has appointed as members of the Committee on Forestry, S. C. Creasy of Bloomsburg, Pa.; M. P. Cooper, Christiana, Pa.; and Watson Craft of Ambler, Pa.

A bill now pending in the Maine Legislature for the preservation, perpetuation and increase of the forests in Maine embodies three important provisions:

First, that the public lands of the State shall be under the superintendence of the State land agent, and that he shall have authority to sell seedlings from these lands at cost; second, when deemed necessary for the preservation and conservation of the forest interests of Maine, the State may take private lands in the same way that lands are taken for railroad beds, making just compensation therefor; third, owners of growing timber of certain kinds may cause the timber on certain tracts to be exempted from taxation by filing a plan of the tract, with description, in the files of the State kept for that purpose, no timber under 12 inches in diameter to be cut from these exempted tracts at any time and taxation to begin only when logging operations are undertaken.

A bill to legalize the acceptance by the Board of Trustees of the New York State School of Agriculture at Morrisville of a large tract of forest land in the town of Georgetown, which the present owner, Charles O. Newton of Homer, wishes to give to the school for the purpose of teaching the students in the school better methods of management of farm woodlots, has been introduced into the New York State Assembly by Hon. M. E. Tallett of Madison County. The school plans to operate this tract with the cooperation and help of the Forestry Schools at Syracuse and Cornell and through establishing fall and spring camps give the boys practical training in farm forestry so that they may know how to appreciate and care for the possibilities of the timber on the farm.

Colonel Joseph Battell, of Middlebury, Vermont, who was widely known among tourists because he debarred automobiles from his big forest preserves, founds a National Forest in Vermont in his will, probated in March. He presents Ellen Mountain, in the towns of Lincoln and Warren, to the Government, the only restrictions being that its thousands of acres of primeval forest be kept intact.

Middlebury College is bequeathed, in addition to $10,000 in cash, 20,000 acres of uncut woodlands and seven well-equipped farms. These woods, too, must be kept in their primitive beauty.

The various towns in which these possessions are situated are given funds to cover taxes for many years. Middlebury Village gets a fine park preserve, too. A thousand dollars a year is set aside to educate a poor Middlebury student. A fund of $5,000 is founded for road maintenance on the estates.

The Department of Forest Utilization of The New York State College of Forestry has established a successful bureau of cooperation in which the producer and consumer of forest products in the State are being brought together to mutual advantage.

A new annual publication devoted entirely to the activities of forestry students has made its appearance under the title of *The Empire Forester*. It is the official organ of the student body of The New York State College of Forestry at Syracuse and treats of the various activities and experiences of the students in camp and college. Much space is given to short articles by various members of the upper class, which relate their personal experiences in the field. Contributions of a lighter vein in the form of jokes and pithy sayings of the camp wag add the final touch.

Mr. W. A. McDonald is in charge of The New York State College of Forestry Exhibit in the State Building at the Panama Exhibition. A unique feature has been added in that Mr. McDonald is giving lectures daily, explaining the work and activities of the college with the help of moving pictures.

Some of the forest lands in the southern Appalachians recently acquired by the Government have just been examined to determine the extent to which they may be used for livestock without impairing the value of the watershed protection. The National Forests of the western States produce enormous quantities of forage and are strongly in demand for pasture.

Heavy rainfall and mild climate combine to promote a heavy growth of vegetation in the southern Appalachians, and the capacity of the land is said to be considerably in excess of that of lands in the West. Within the areas so far examined the department of agriculture says there is practically no indication of injury from grazing, though some of the mountain lands have suffered from various forms of injury and lack of proper methods of use and protection.

Approximately 97 per cent of the lands acquired by the Government are now covered by timber or undergrowth. The remainder consists of land potentially valuable for forest purposes but at present cleared of timber. Of the non-timbered lands a part are "balds" supporting heavy growths of excellent grasses, while the remainder are lands on which cultivation has been attempted, but which will grow up again to trees.

BOOK REVIEWS

OUR NATIONAL DEFENSE, THE PATRIOTISM OF PEACE, by George H. Maxwell, Rural Settlements Association, Washington and New Orleans, price $1.25.

The portion of this book which will most appeal to foresters is the argument made by the author for the establishment of a large reserve of trained soldiers who in time of peace shall be employed in perpetuating the forests of this country in such manner that the forests shall be made to pay for maintaining them.

Such a reserve, contends the author, must not be composed of men in ordinary industry because to take them from such employment would be detrimental to the industries on which we are dependent. They must be engaged in such work as foresters are engaged in, from which they can be instantly available for military service, without disturbance to industry. If such a reserve were properly organized unemployment would no longer be an issue. Men out of work could be absorbed into the reserve when work is slack and returned to ordinary industrial employment when their labor was needed there. All further suffering from lack of employment by sober, industrious men would cease.

"We could in this country," says the author, "enlist an army of men and perfectly organize it to plant forests and care for them, build the great works necessary for flood control and for river regulation, waterways and highways, and do all the work necessary to control, use and perpetuate our natural resources, and they would do that work in time of peace and make the best soldiers in the world in time of war.

"We would then have defense against the invasion of Nature's forces in times of peace, against floods and forest fires and drouth and overflow, and against the invasion of an armed force in time of war. Pittsburgh would be protected from floods, as would the Ohio and Mississippi valleys.

"It is impossible to defend a coast line extending from Nova Scotia to Florida, besides the Pacific Coast, if we have no defense but a navy and fortifications. Any of the great European nations could land an invading force on the Atlantic coast, as Japan could on the Pacific, in the event of war unless we oppose them with troops instantly ready and properly trained, equipped and organized.

"There is only one solution, and that is to enlist a reserve modeled after the German or French forestry systems. The reservists in those systems are foresters in time of peace and soldiers in time of war."

SOME LUMBER PROBLEMS—Northern Hemlock and Hardwood Manufacturers Association, Milwaukee, Wis., 50 cents.

The Association deserves to be complimented for the production of this book which contains a number of valuable addresses on important lumbering subjects. Matt Daly's paper on "Camp Missionary Work" is unique; W. W. Brown's paper on "Lumber for Factory Trade," as well as Enos Colburn's on "Birch for Interior Finish" are extremely practical contributions from the consumer's standpoint and would be of interest to any hardwood manufacturer. Charles H. Crownhart's paper on "Various Phases of Compensation" is one of the most complete and scientific studies of this subject yet made and is of interest to every employer of labor in the country. Chas. F. Simonson's article on "Inter-Insurance," and B. G. Dahlberg's on "Classification of Lumber Rates," are of universal interest to lumbermen. Edward Hines' address on "Better Business Methods" shows its author's wonderful grasp of detail. It is a paper that should be read by every lumberman in the United States who hopes to keep abreast of the times. In the same class with Mr. Hines' address is R. S. Kellogg's paper on "Troubles of Lumber Industry." This paper has been read by Mr. Kellogg at several important association meetings and whenever read has provoked a great deal of interest. Mr. Kellogg is the foremost practical statistician in the lumber industry. His arguments are invariably based on figures, and figures of a kind that cause the lumberman to sit up and take notice.

O. T. Swan has presented the question of "Timber Utilization" in a comprehensive and concise form, combining the technical with the practical sides of the problem. W. A. Holt's paper on "Timberland Taxation" and C. H. Worcester's paper on the "Cost of Carrying Timber" are papers that every owner of timberland should read.

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Naturwissenschaftliche zeitschrift für forst- und landwirtschaft, Nov.-Dec., 1914.—Die bohrmuschel (Genus Teredo Linné), by F. Moll, p. 505-64.

North woods, Feb. 1915.—The grain car door industry, p. 17-21.

Proceedings of the Society of American foresters, Jan. 1915.—The invasion of a planted prairie grove, by Raymond J. Pool, p. 1-8; Notes on the relation of planting methods to survival, by E. E. Carter, p. 9-17; A formula for normal growing stock in selection system forests, by Thornton T. Munger, p. 18-21; Land classification rules for an Arizona forest, by John D. Guthrie, p. 22-31; The construction of a set of taper curves, by W. B. Barrows, p. 32-40; Sand-dune reclamation on the coast of northern California and southern Oregon, by Frank B. Kellogg, p. 41-64; Reading and replotting curves by the strip method, by W. B. Barrows, p. 65-7; Monterey pine, by Louis T. Larsen, p. 68-74.

Revue des eaux et forêts, Jan. 1, 1915.—Les déboisements stratégiques et le droit des propriétaires, by G. Géneau, p. 521-7.

FORESTERS ATTENTION

AMERICAN FORESTRY will print free of charge in this column advertisements of foresters wanting positions, or of persons having employment to offer foresters

YOUNG MAN, expert in all branches of shade tree work and with forestry training, desires position as forester, arboriculturist or tree surgeon. References furnished. Address C. S., care AMERICAN FORESTRY.

FORESTER of technical training, six years' teaching and practical experience in different parts of the United States, wishes to better position. Best references from university and employers, and others. Address G. O. T., Care AMERICAN FORESTRY.

FORESTER with 15 years experience Estimating, Surveying, Mapping, and in the care of private holdings desires position. Perfectly reliable in every way, and with executive ability. Address "A." care AMERICAN FORESTRY.

WANTED—By Graduate Forester, position in forestry work in South. or Tropics. Slight knowledge of Spanish and German. Scientific or experimental work preferred. Address, "F. W. H." Care of AMERICAN FORESTRY.

WANTED—By young man intending to study forestry, position with lumber company, surveying party, or other position by which he can gain practical knowledge. Address L. L., Care AMERICAN FORESTRY.

YOUNG MAN, 27 years old, unmarried, university training, business experience and three years of practical experience in surveying and construction, including preliminary surveys, estimates, railroad and highway location surveys and construction, topographic surveys, mapping, etc. Capable of taking charge of party, desires position with forester or lumber firm. Best references from former employers. Address "T. B. C.," Care AMERICAN FORESTRY.

FORESTER, with seven years' practical experience, desires a position as Forester. Have had considerable experience in reforestation and management, also fire protection. Address "T. F. H." Care AMERICAN FORESTRY.

FOREST ENGINEER—Best of American and European training. Five years of practical work along lines of organization, administration, protection, cruising and appraising. Would like position with some large timber holding company, railroad, or municipal watershed. Best of references. Address "CRUISER," Care AMERICAN FORESTRY.

A forest school graduate with experience in U. S. Forest Service and with lumber company, also possessing thorough business training, will consider offer of good forestry position. Address M., Care AMERICAN FORESTRY.

WANTED—Position by practical experienced man as tree surgeon. Am familiar with trees of all kinds. Special terms on orchard work. Terms reasonable. Small jobs will not be considered. Will send book upon request. Do not write for book out of idle curiosity. Address Box 6, care of AMERICAN FORESTRY.

MAN with practical experience in lumbering, timber estimating, mapping and compass work. Have had one year of college training and would like position where there is an opportunity to acquire further knowledge of forestry. Address Box 7, care of AMERICAN FORESTRY.

POSITION WANTED—Engineer with twelve years' experience in Engineering and Forestry. Expert land surveyor, timber estimator, timberland R. R. location. Experienced in woods operation and good manager of men. Permanent position desired with Timber Company, Railroad Company or Private Estate. At present employed. Address Box 4, Care AMERICAN FORESTRY.

ASSISTANT FORESTER—$1,500 to $1,800 annum. Limited to residents of New Jersey if a sufficient number of qualified candidates; if not, open to citizens of the United States without regard to residence. Candidates will be permitted to submit replies and papers in this examination by mail.

All candidates must be Professional Foresters with good, practical experience. Experience in woodlot management, in small lumbering and in shade tree work is desired. Subjects of examination and relative weights:

Experience and Education	6
Personal qualifications, age, character, etc	2
Paper on some subject pertinent to forest conditions in New Jersey	2
TOTAL	10

Communicate with CIVIL SERVICE COMMISSION, State House, Trenton, N. J.

A GRADUATE of one of the leading Forestry Schools of the country, with some experience in State and private work, would like to secure a position in some Eastern or Central State. Address S. G. H., care AMERICAN FORESTRY.

FOREST ENGINEER seeks position with an estimating firm or with a lumber company. Best of references. Address Forest Engineer, Care AMERICAN FORESTRY.

SURVEYOR—For large tracts of land, roads and railroads; furnishes instrument; capable of taking charge of party; would like position in South that will last all winter. Address "T. B. W.," care AMERICAN FORESTRY.

GRADUATE FORESTER—Practical experience in cruising, mapping and scaling. Eager to go anywhere. References furnished. Address R. L., care of AMERICAN FORESTRY.

PRACTICAL FORESTER wants situation on private estate. Has practical experience of sowing, laying, planting out, pruning, thinning, firebelts, ditching, rotation planting, mixed planting and thorough knowledge of fencing and tree felling. Has had seven years experience on best managed forestry area in Scotland. Address, "Raith," Care AMERICAN FORESTRY.

PRACTICAL FORESTER wants position with city Park Commission. Understands fully nursery work, planting, trimming and tree surgery. Best references and practical experience. Address "L. M. E.," Care AMERICAN FORESTRY.

WANTED—A position as an inspector of ties, timbers and lumber, by a forest school graduate with experience in inspecting ties, timbers and lumber. Can furnish best of references. Address Inspector, Care AMERICAN FORESTRY.

Graduate of Forestry School, having studied forestry and lumbering operations in this country and Germany, with experience in the U. S. Forest Service, and also in state and private nursery work, would like position with forest engineering firm or lumber company. Best of references. Address XY, Care of AMERICAN FORESTRY.

WANTED—A job as fire ranger or guard by a strong, healthy young man twenty-one years of age. Address "3" care AMERICAN FORESTRY.